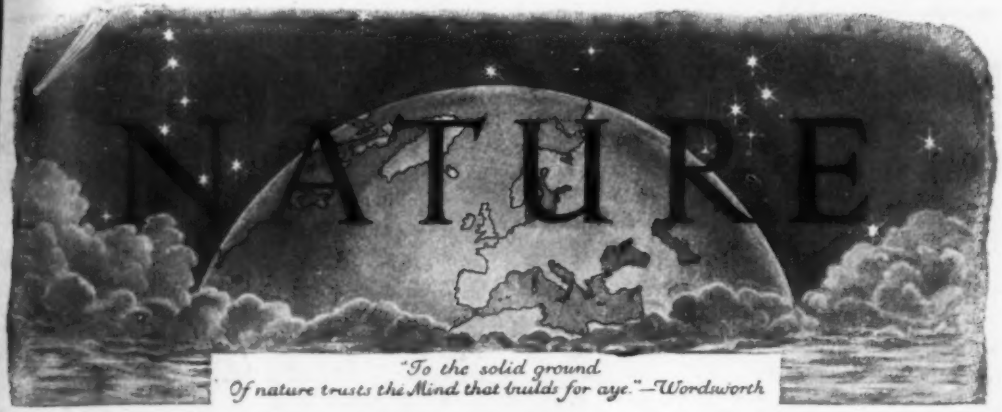
PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.
FEB 1 9 1946

"NATURE," JANUARY 26, 1946

SUPPLEMENT: RECENT SCIENTIFIC and TECHNICAL BOOKS



Vol. 157, No. 3978 SATURDAY, JANUARY 26, 1946 ONE SHILLING & SIXPENCE

NEWTON & CO LTD

INTRODUCE

THE NEWTON F.S.1./500

For particulars of its features write to

72 WIGMORE STREET
LONDON, W.1

Telephone: WELbeck 4131

Telegrams: Newtobar Phone LONDON

CRYSTALLOGRAPHIC ANALYSIS

The RAYMAX CRYSTALLOGRAPHIC X-RAY UNIT

Write for descriptive leaflet 433/7-1

METROPOLITAN Vickers ELECTRICAL CO. LTD.
TRAFFORD PARK — MANCHESTER 17.

C/R501

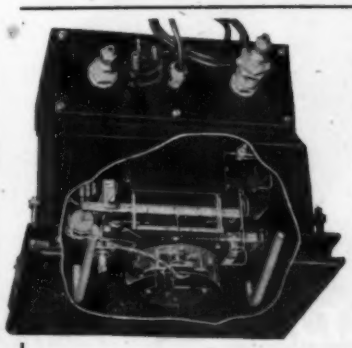
ESTAB. C. BAKER LONDON 1765

GREENOUGH and LOW POWER BINOCULAR MICROSCOPES are now available from stock subject to M.O.S. allocation.

Prices and full particulars on application.

C. BAKER, 244 High Holborn, LONDON, W.C.1

Member Scientific Instrument Manufacturers' Assn. of Gt. Britain



With this controller some types of furnaces have been held to plus and minus 1½° at 965° C.

The Electro-Pneumatic Controller

NEGRETTI & ZAMBRA
122 Regent Street, London, W.1

THE MULLARD WIRELESS SERVICE COMPANY LIMITED, CENTURY HOUSE, SHAFTESBURY AVENUE, LONDON, W.C.2. (135)

MICROID FLASK SHAKER

A new variable speed "wrist-action" shaker—silent, portable and efficient

This handy shaking machine will stand on the laboratory bench. Total load, four 500 ml. flasks each half full. Frequency of shaking continuously variable up to 500 cycles/min. Power consumption 60 watts.

The Microid Flask Shaker is silent in operation. It abolishes the tedium of hand shaking. It can find a use in every chemical laboratory.

Leaflet GT. 1351 free on application.

GRIFFIN and TATLOCK Ltd

Established as Scientific Instrument Makers in 1826

LONDON Kemble St., W.C.2 — MANCHESTER 19, Cheetham Hill Rd., 4 — GLASGOW 45, Renfrew St., C.2 — EDINBURGH 7, Teviot Place, 1

BIRMINGHAM: STANDLEY BELCHER & MASON LTD., Church Street, 3

Books ON PURE AND APPLIED SCIENCE

LARGE STOCK ALWAYS AVAILABLE

FRENCH AND ***AMERICAN BOOKS*** mentioned in this Journal may be ordered through our Foreign Department. Those not in stock will be obtained, under Board of Trade Licence, in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly

ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.

LONDON: 136 GOWER STREET, W.C.1

Telephone: EUSton 4282 (5 lines)

PRINCIPLES AND PRACTICE OF QUALITATIVE ANALYSIS

By P. E. SPOERRI

Associate Professor of Chemistry, Polytechnic Institute of Brooklyn

H. WEINBERGER,

Instructor in Chemistry, College of the City of New York,

and

R. GINELL

Assistant in Chemistry, Polytechnic Institute of Brooklyn

282 pages 9 × 6 58 Illustrations 16s. 6d.

NOT merely a book of step-by-step instructions to be followed mechanically, this text is designed to stimulate student interest and initiative. After a thorough treatment of atomic structure, the authors take up complex ions and the kinetic theory and then consider the reactions of pure substances, reactions with solvents, and reactions in solutions.

Instead of presenting the theory in a series of loosely connected discussions, the authors have woven the material into an integrated pattern of thought.

McGraw-Hill Publishing Co. Ltd.

Aldwych House, London, W.C.2

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

BLAINE, ROBERT GORDON. The Slide Rule as an Aid in Calculating: with a Short Description of some other Labour-saving Methods employed by the Modern Calculator. Sixth edition, new impression. Fcap. 8vo. Pp. xii +152. (London: E. and F. N. Spon, Ltd., 1945.) 6*s*. net.*

GAMOW, G. Mr. Tompkins Explores the Atom. Fcap. 4to. Pp. x +97. (Cambridge: At the University Press, 1945.) 10*s*. 6*d*. net.*

DE GROOT, S. R. L'Effet Soret: diffusion thermique dans les phases condensées. Med. 8vo. Pp. viii +191. (Amsterdam: N. V. Noord-Hollandsche Uitgeversmij., 1945.)*

HARDY, G. H., and WRIGHT, E. M. An Introduction to the Theory of Numbers. Second edition. Roy. 8vo. Pp. xvi +408. (Oxford: Clarendon Press; London: Oxford University Press, 1945.) 25*s*. net.*

RAO, VEPA V. LAKSHMANA. The Decibel Notation and its Application to Radio Engineering and Acoustics. Demy 8vo. Pp. xvi +179. (Madras: Addison and Co., Ltd., 1944.) 8.12 rupees; 13*s*. 6*d*.*

Engineering

DURNEY, W. C. Capstan and Turret Lathes. Demy 8vo. Pp. 170. (London: Sir Isaac Pitman and Sons, Ltd., 1945.) 12*s*. 6*d*. net.

FOWLER, W. H., Compiled by. Fowler's Mechanical Engineer's Pocket Book, 1945. Fcap. 8vo. Pp. liii +493. (Manchester: Scientific Publishing Co., 1945.) 4*s*. net.

FREBERG, C. R., and KEMLER, E. N. Aircraft Vibration and Flutter. Demy 8vo. Pp. x +214. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 18*s*. net.

GAY, CHARLES M., and FAWCETT, CHARLES DE V. Mechanical and Electrical Equipment for Buildings. Second edition. Demy 8vo. Pp. v +453. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 30*s*. net.

STUBBINGS, G. W. The Diseases of Electrical Machinery: a Textbook for the use of Electricians, Apprentices and Power Plant Engineers. Second edition. Cr. 8vo. Pp. vii +229. (London: E. and F. N. Spon, Ltd., 1945.) 10*s*. 6*d*.*

STURLEY, K. R. Radio Receiver Design. Part 2: Audio Frequency Amplifiers, Television and Frequency Modulated Receiver Design. Demy 8vo. Pp. xv +480. (London: Chapman and Hall, Ltd., 1945.) 28*s*. net.*

Chemistry : Chemical Industry

BURK, R. E., and GRUMMITT, OLIVER, Edited by. Major Instruments of Science and their Applications to Chemistry. (Frontiers in Chemistry, Vol. 4: Published under the auspices of Western Reserve University.) Med. 8vo. Pp. xii +151. (New York: Interscience Publishers, Inc., 1945.) 3.50 dollars.*

DEMING, H. G., and ARENSON, S. B. Exercises in General Chemistry and Qualitative Analysis. Fifth edition. Demy 4to. Pp. x +298. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 12*s*. net.

DRAKE, N. L., Edited by. Organic Syntheses. Vol. 24. Med. 8vo. Pp. v +119. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 10*s*. 6*d*. net.

HEYS, H. L. A New Introduction to Chemistry. Cr. 8vo. Pp. 410. (London: George G. Harrap and Co., Ltd., 1945.) 6*s*. 6*d*.*

HOPE, E., Edited by. Chemists' Year Book, 1945. Fcap. 8vo. Pp. 1255. (Manchester: Sherratt and Hughes, Ltd., 1945.) 30*s*. net.

HOUGEN, OLAF A., and WATSON, KENNETH M. Chemical Process Principles. Part 1: Material and Energy Balances. Demy 8vo. Pp. xii +452. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 27*s*. net.

URDANG, GEORGE. Pharmacopoeia Londinensis of 1618. Reproduced in facsimile, with a Historical Introduction. (Hollister Pharmaceutical Library, No. 2.) Pott folio. Pp. ix +299. (Madison, Wis.: State Historical Society of Wisconsin; New York: Schuman's, 1944.) 12 dollars.*

WEISSBERGER, ARNOLD, Edited by. Physical Methods of Organic Chemistry. Vol. 1. Med. 8vo. Pp. vii +736. (New York: Interscience Publishers, Inc., 1945.) 8.50 dollars.*

WELLINGS, A. W. Chemistry. (General Science for Schools Series.) Cr. 8vo. Pp. 227. (London: John Murray, 1945.) 4*s*. 6*d*.

Technology

CAMM, F. J., GILBERT-ROLFE, H. W., and NICHOLAS, D. C. Newnes' Plastics Manual. Med. 8vo. Pp. viii +272. (London: George Newnes, Ltd., 1945.) 17*s*. 6*d*. net.

COWDREY, I. H., and ADAMS, R. G. Materials Testing: Theory and Practice. Second edition. Demy 8vo. Pp. vii +156. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 10*s*. 6*d*. net.

MERLUB-SOBEL, M. Metals and Alloys Dictionary. Demy 8vo. Pp. iv + 238. (Brooklyn, N.Y.: Chemical Publishing Co., Inc.; London: Chapman and Hall, Ltd., 1945.) 22*s*. net.

MORRIS, D. F. Practical Woodwork. (Practical Work Books Series.) Cr. 8vo. Pp. 54. (London and Edinburgh: Thomas Nelson and Sons, Ltd., 1945.) 1*s*.

SKINNER, W. E., Edited by. Oil and Petroleum Year Book, 1945. Demy 8vo. Pp. 296. (London: W. E. Skinner, 1945.) 12*s*. 6*d*. net.

WALL'S Dictionary of Photography. Eleventh edition, revised by A. L. M. Sowerby. Gl. 8vo. Pp. 701. (London: Fountain Press, Ltd., 1945.) 12*s*. 6*d*. net.

Astronomy

BENEST, E. E., and TIMBERLAKE, E. M., Specially developed and arranged by. Astro-Navigation Tables for the Common Tangent Method. Demy 4to. Pp. iii +107. (Cambridge: W. Heffer and Sons, Ltd., 1945.) 7*s*. 6*d*. net.*

CHICHESTER, FRANK. Star Compass: Longitude Finder, Star Clock and Planisphere (Model for Latitude Band 50°–55° N.). Roy. 16mo. Pp. 43. (London: George Allen and Unwin, Ltd., 1945.) 5*s*. 6*d*. net.*

KESTEN, HERMANN. Copernicus and his World. Translated by E. B. Ashton and Norbert Guterman. Demy 8vo. Pp. ix +408. (London: Martin Secker and Warburg, Ltd., 1945.) 21*s*. net.*

Geology : Mineralogy

BLYTH, F. G. H. A Geology for Engineers. Second edition. Demy 8vo. Pp. viii +329 +16 plates. (London: Edward Arnold and Co., 1945.) 21*s*. net.*

ROMER, ALFRED SHERWOOD. Vertebrate Paleontology. Roy. 8vo. Pp. ix +687. (Chicago: University of Chicago Press; London: Cambridge University Press, 1945.) 42*s*. net.*

General Biology : Natural History Botany : Zoology

FITTER, R. S. R. London's Natural History. (The New Naturalist, No. 3.) Med. 8vo. Pp. xii +282 +72 plates. (London: Wm. Collins, Sons and Co., Ltd., 1945.) 16*s*. net.*

FORD, E. B. Butterflies. (The New Naturalist, No. 1.) Med. 8vo. Pp. xiv +368 +72 plates. (London: Wm. Collins, Sons and Co., Ltd., 1945.) 16*s*. net.*

GRISCOM, LUDLOW. Modern Bird Study. Cr. 8vo. Pp. xi +190 +15 plates. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1945.) 14*s*. net.*

MILTHORPE, E. J. Vegetable Matter in the New South Wales Wool Clip. Sup. Roy. 8vo. Pp. vii +60. (Sydney: Central Wool Committee Testing House, 1943.) 21*s*.*

PARKER, JOHN B., and CLARKE, JOHN J. An Introduction to Animal Biology. Second edition. Med. 8vo. Pp. 532. (London: Henry Kimpton, 1945.) 19*s*. net.*

Agriculture : Horticulture : Forestry

BAKER, J. O. Two Acres and Freedom. Cr. 8vo. Pp. 242. (London: John Gifford, Ltd., 1945.) 7*s*. 6*d*. net.

BUSH, RAYMOND. Frost and Fruitgrower. Demy 8vo. Pp. 119. (London: Cassell and Co., Ltd., 1945.) 10*s*. 6*d*. net.

CAOUTCHOUC. Le caoutchouc d'Hévéa: initiation aux méthodes d'exploitation en Indochinie. Imp. 8vo. Pp. 159 +74 plates. (Paris: Institut français du Caoutchouc, 1945.) 400 francs.*

GUNN, EDWIN. Farm Buildings: New and Adapted. Second edition. Demy 8vo. (London: Crosby Lockwood and Son, Ltd., 1945.) 10*s*. 6*d*. net.

HARROY, JEAN-PAUL. Afrique, terre qui meurt: la dégradation des sols Africains sous l'influence de la colonisation. Roy. 8vo. Pp. x +557. (Bruxelles: Office International de Librairie, 1944.) 250 Belgian francs; 30*s*.*

LOWDERMILK, WALTER CLAY. Palestine: Land of Promise. Cr. 8vo. Pp. 167 +16 plates. (London: Victor Gollancz, Ltd., 1944.) 4*s*. 6*d*. net.*

QUARRELL, C. P. Continuous Lettuce-Growing for Amateurs. Cr. 8vo. Pp. 24. (Chertsey: Intensive Gardening Press, Ltd., 1945.) 1*s*. 6*d*. net.

ROBINSON, F. W. The Soil. Fifth edition. Cr. 8vo. Pp. 322. (London: John Murray, 1945.) 9*s*. net.

RUSSELL, SIR JOHN, Edited by. Agriculture To-day and To-morrow. Cr. 8vo. Pp. 199. (London: Michael Joseph, Ltd., 1945.) 8*s*. 6*d*. net.

WHITEHEAD, TATHAM, McINTOSH, THOMAS P., and FINDLAY, WILLIAM M. The Potato in Health and Disease. Second edition, revised and enlarged. Demy 8vo. Pp. xv +400. (Edinburgh and London: Oliver and Boyd, 1945.) 25*s*. net.*

Anatomy : Physiology

BELILIOS, A. D., MULVANY, D. K., and ARMSTRONG, K. F. Elementary Anatomy and Physiology. Fcap. 8vo. Pp. viii +186. (London: Baillière, Tindall and Cox, 1945.) 4*s*. net.

MAY, RAOUL-MICHEL. La formation du système nerveux. (L'Avenir de la science, 20.) Ex. Cr. 8vo. Pp. 302 +45 plates. (Paris: Libr. Gallimard, 1945.) 330 francs.*

STARLING'S Principles of Human Physiology. Ninth edition, by C. Lovatt Evans; the Chapters on the Special Senses, by H. Hartridge. Roy. 8vo. Pp. x +1155. (London: J. and A. Churchill, Ltd., 1945.) 36*s*.*

Anthropology : Archæology

KERÉNYI, KARL. Hermes der Seelenführer: das Mythologem vom männlichen Lebensursprung. (Albae Vigiliae, Neue folge, Heft 1.) Med. 8vo. Pp. 111. (Zürich: Rhein-Verlag, 1944.)*

KERÉNYI, KARL. Romandichtung und Mythologie: ein Briefwechsel mit Thomas Mann. Herausgegeben zum siebzigsten Geburtstag der Dichters 6 Juni 1945. (Albae Vigiliae: Neue folge, Heft 2.) Med. 8vo. Pp. 96. (Zürich: Rhein-Verlag, 1945.)*

PHILIPPSON, PAULA. Thessalische Mythologie. Med. 8vo. Pp. 196. (Zürich: Rhein-Verlag, 1944.)*

STOESSL, FRANZ. Der Tod des Herakles: Arbeitsweise und Formen der antiken Sagendichtung. Med. 8vo. Pp. 128. (Zürich: Rhein-Verlag, 1945.)*

Philosophy : Psychology

CASSIRER, ERNST. An Essay on Man: an Introduction to a Philosophy of Human Culture. (Published on the Louis Stern Memorial Fund.) Roy. 8vo. Pp. xi +237. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1944.) 20*s*. net.*

CASSIRER, ERNST. Rousseau, Kant, Goethe: Two Essays. Translated from the German by James Gutmann, Paul Oskar Kristeller and John Herman Randall, Jr. (History of Ideas Series, No. 1.) Ex. Cr. 8vo. Pp. ix +98. (Princeton, N.J.: Princeton University Press; London: Oxford University Press, 1945.) 10*s*. net.*

MILLER, NANCY. Take a Look at Yourself. Cr. 8vo. Pp. 119. (London: Skeffington and Son, Ltd., 1945.) 8*s*. 6*d*. net.

PHILP, HOWARD L. A Psychologist Looks at Sex. Cr. 8vo. Pp. 110. (London: Hutchinson and Co. (Publishers), Ltd., 1945.) 8*s*. 6*d*. net.

SLATER, HUMPHREY, Edited by. Polemic. Cr. 4to. Pp. 64. (London: Rodney Phillips and Co., 1945.) 2*s*. 6*d*.*

THOULESS, R. H. Straight and Crooked Thinking. Fourth edition. Gl. 8vo. Pp. 284. (Sevenoaks: English Universities Press, Ltd., 1945.) 5*s*. net.

WALLAS, GRAHAM. The Art of Thought. Cr. 8vo. Pp. x +129. (London: Watts and Co., Ltd., 1945.) 5*s*. net.*

WOLFF, CHARLOTTE. A Psychology of Gesture. Translated from the French by Anne Tennant. Demy 8vo. Pp. 225. (London: Methuen and Co., Ltd., 1945.) 16*s*. net.

Bacteriology : Hygiene

TEMKIN, OWSEI. The Falling Sickness: a History of Epilepsy from the Greeks to the Beginnings of Modern Neurology. (Publications of the Institute of the History of Medicine, the Johns Hopkins University: First Series, Monographs, Vol. 4.) Sup. Roy. 8vo. Pp. xv +380 +7 plates. (Baltimore, Md.: Johns Hopkins Press, 1945.) 4 dollars.*

THOMAS, HAROLD. People who Live in Glass Houses: as seen by a V.D. Orderly. Fcap. 8vo. Pp. ii +80. (London: Central Council for Health Education, 1945.) 9*d*.*

Miscellany

CERNUSCHI, FELIX. La ciencia en la educacion intelectual. Med. 8vo. Pp. 285. (Rosario: Editorial Rosario S.A., 1945.) 8 dollars.*

CHATHAM HOUSE. France and Britain: a Report by a Chatham House Study Group. Ex. Cr. 8vo. Pp. 110. (London and New York: Royal Institute of International Affairs, 1945.) 6*s*. net.*

FEDERN, ROBERT. Peace, Prosperity, International Order. Demy 8vo. Pp. viii +168. (London: Williams and Norgate, Ltd., 1945.) Paper, 10*s*. 6*d*. net; cloth, 12*s*. 6*d*. net.*

HICKS, J. R., and HICKS, URSULA K. The Incidence of Local Rates in Great Britain. (National Institute of Economic and Social Research, Occasional Papers, 8.) Roy. 8vo. Pp. viii +64. (Cambridge: At the University Press, 1945.) 6*s*. net.*

JENKS, C. WILFRED. The Headquarters of International Institutions: a Study of their Location and Status. (Post-War Problems.) Demy 8vo. Pp. 102. (London and New York: Royal Institute of International Affairs, 1945.) 6*s*. net.*

KUZNETSOVA, O. The Enemy under the Microscope: a Story of the Life of Louis Pasteur. Translated from the Russian by E. Bone. Cr. 8vo. Pp. 256. (London: Hutchinson and Co. (Publishers), Ltd., 1945.) 6*s*. net.

NUNN, SIR PERCY. Education: its Data and First Principles. Third edition revised and in part rewritten. Cr. 8vo. Pp. 283. (London: Edward Arnold and Co., 1945.) 7*s*. 6*d*. net.*

ROUSSEAU, PIERRE. Histoire de la Science. (Les grandes études historiques.) 21e édition. Cr. 8vo. Pp. 823. (Paris: Arthème Fayard, 1945.) 148 francs.*

WHITE, A. SPENCER. Elements of Technical Science. (Dent's Modern Science Series.) Cr. 8vo. Pp. viii +325. (London: J. M. Dent and Sons, Ltd., 1945.) 4*s*. 3*d*.*

INFRA RED
ABSORPTION SPECTRA

There are recording and non-recording

HILGER

SPECTROMETERS

for Research or Routine Control purposes

Adam Hilger Ltd.
98 St. Pancras Way
Camden Road
London, N.W.1

'Phone: GULliver 5571

THE SCHOLES BOMB CALORIMETER possesses many unique features

*

Please ask for details

G. CUSSONS LTD
The Technical Works
MANCHESTER

JAMES SWIFT & SON LTD.

Manufacturers of MICROSCOPES for BIOLOGY, MINERALOGY, METALLURGY, PHOTOMICROGRAPHIC & PROJECTION APPARATUS, GONIOMETERS, REFRACTOMETERS, SPECTROMETERS, OPTICAL MEASURING & TESTING APPARATUS, POLARISING PRISMS & OPTICAL ELEMENTS

REPAIRS TO ANY MAKE OF ABOVE INSTRUMENTS

Owing to prevailing conditions delivery cannot always be guaranteed

81 Tottenham Court Road, London, W.1

SECOND-HAND MICROSCOPES

by SWIFT, BECK, WATSON, BAKER, ZEISS, LEITZ, REICHERT, HIMMLER, BAUSCH & LOMB, etc.

MICROSCOPES BOUGHT for CASH OR TAKEN IN EXCHANGE

A limited selection available. State requirements.

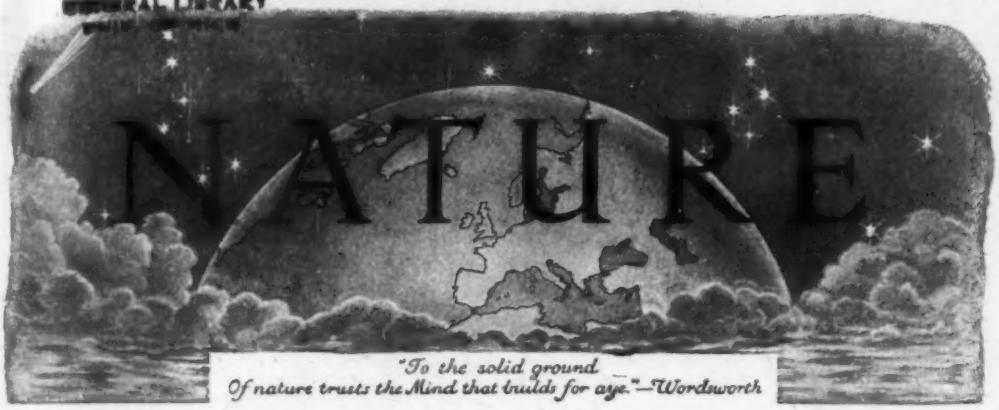
CLARKSON'S, 338 High Holborn, LONDON, W.C.1
Opp. Gray's Inn Rd. 'Phone: HOLborn 2149. Estab. over a Century

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

"NATURE," FEBRUARY 23, 1946

SUPPLEMENTS: RECENT SCIENTIFIC and TECHNICAL BOOKS
INDEX to VOLUME 156

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.
MAR 1 8 1946



Vol. 157, No. 3982 SATURDAY, FEBRUARY 23, 1946 TWO SHILLINGS

NEWTON & CO LTD

RESEARCH DATA, recorded on 35 mm. film, can be

CRITICALLY EXAMINED

by means of our FILM-STRIP DIASCOPE

Telephone: WELbeck 4131

72 WIGMORE STREET LONDON, W.1

Telegrams: Newtobar Phone LONDON

Invaluable for Aerofoil tests

Air Velocity measured direct in feet per minute or specified units.

THE METROVICK DIRECT-READING VELOMETER

METROPOLITAN Vickers ELECTRICAL CO. LTD. TRAFFORD PARK — MANCHESTER 17

C/V 504

Send for leaflet No. 437/1-1

ESTAB. C. BAKER 244 HIGH HOLBORN LONDON 1765

B.L.M. 3E

B.L.M. 3 Series of MICROSCOPES

Models suitable for STUDENT BACTERIOLOGIST RESEARCH, ETC.

both Monocular and Binocular

Early delivery can be anticipated of Students' Models—Write for particulars.

C. BAKER, 244 High Holborn, LONDON, W.C.1

Member Scientific Instrument Manufacturers' Assn. of Gt. Britain

The Flow-operated Switch

Safeguards a machine or plant which depends on water for cooling; should the water be cut down, warning is given at once.

NEGRETTI & ZAMBRA 122 Regent Street, LONDON, W.1

NEW OSCILLOGRAPH

Usable up to 5 Mc/s

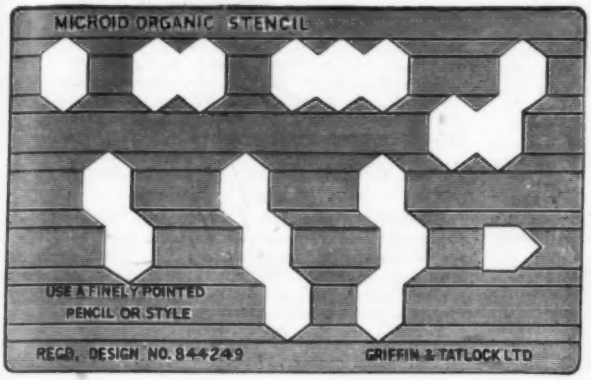
PRICE £75

The Mullard High Frequency Cathode Ray Oscillograph type E.805 sets a new standard for portable instruments and embodies many features previously found only in instruments twice its size and price. Special features include: High impedance Input Circuit. High gain, wide band Vertical Amplifier (Sensitivity 5 mV/cm, frequency range 2 c/s - 5 Mc/s). Electronically stabilised power supply. This instrument is now available in limited quantities. Write for leaflet M.503 to:— THE MULLARD WIRELESS SERVICE CO. LTD., Measuring Apparatus Section, Century House, Shaftesbury Avenue, W.C.2.

MULLARD *MEASURING APPARATUS*

(1248)

MICROID ORGANIC STENCIL



This new stencil facilitates the drawing of organic structural formulae. It is of value to students in writing up notes, to research workers in writing theses and to printers in preparing copy for the press. The substituent positions fit the letter and line spacing of the standard typewriter.

The rings in the Microid Organic Stencil are precision-cut in transparent plastic sheet.

Order as :

B46—632. Microid Organic Stencil. Each 4s. 6d. ; dozen £2 10s.

Leaflet GT. 1346/1 free on application.

GRIFFIN and TATLOCK Ltd

Established as Scientific Instrument Makers in 1826

LONDON Kemble St., W.C.2 — MANCHESTER 19, Cheetham Hill Rd., 4 — GLASGOW 45, Renfrew St., C.2 — EDINBURGH 7, Teviot Place, 1

BIRMINGHAM : STANDLEY BELCHER & MASON LTD., Church Street, 3

Books ON PURE AND APPLIED SCIENCE

LARGE STOCK ALWAYS AVAILABLE

FRENCH AND ***AMERICAN BOOKS*** mentioned in this Journal may be ordered through our Foreign Department. Those not in stock will be obtained, under Board of Trade Licence, in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly

ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.

LONDON : 136 GOWER STREET, W.C.1

Telephone : EUSton 4282 (5 lines)

PHYSICAL ELEMENTS OF GEOGRAPHY

By VERNOR C. FINCH

and GLENN T. TREWARTHA

Professors of Geography, University of Wisconsin

McGraw-Hill Series in Geography

641 pages 9 × 6 Illustrated 21s.

THIS book comprises Part One of *Elements of Geography*, published as a separate volume. The emphasis has been placed upon the nature or form of the physical elements of geography and upon their world distribution, rather than upon the process of their origin.

The selection of material for inclusion has been made with a single objective : to describe and depict the major component elements of the physical earth and to enable the student to interpret the significance of their areal association.

Contents

Elements of Weather and Climate
Climatic Types and their Distribution
Processes concerned with the Origin of Landforms
Landforms
Earth Resources
Appendix

McGraw-Hill Publishing Co. Ltd.

Aldwych House, London, W.C.2

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

CLARK, C. H. DOUGLAS. The Story of the Atomic Bomb: a Popular Review of the Principal Discoveries which had Led Up to its Production. Demy 8vo. Pp. 52 +4 plates. (Brighton: Machinery Publishing Co., Ltd., 1945.) 3*s*. 6*d*.*

COHEN, I. BERNARD. Roemer and the First Determination of the Velocity of Light. (History of Science Series, No. 1.) Med. 8vo. Pp. 64. (New York: Burndy Library, Inc., 1944.) 1 dollar.*

COOLIDGE, JULIAN LOWELL. A History of the Conic Sections and Quadric Surfaces. Roy. 8vo. Pp. xi +214. (Oxford: Clarendon Press; London: Oxford University Press, 1945.) 21*s*. net.*

KEESOM, W. H. Helium. Roy. 8vo. Pp. xx +494. (Amsterdam, London and New York: Elsevier Publishing Co., 1942.)*

NAHMIAS, MAURICE E. Le cyclotron: la désintégration de la matière et la radiobiologie. Med. 8vo. Pp. iv +254 +24 plates. (Paris: Éditions de la *Revue d'Optique théorique et instrumentale*, 1945.) 200 francs.*

SCHELVEN, THEODORE VAN. Weiss Magnetons as Components of Nuclear and Subnuclear Structures. Roy. 8vo. Pp. iv +34 +5 plates. (Amsterdam: Kosmos Publishing Co., 1945.) 3 dollars.*

SETH, RAJANI KANTA. Ether, Electron and Matter. Cr. 8vo. Pp. iii +83. (Calcutta: The Author, 347 Upper Chitpore Road, 1945.) 2 rupees.*

SOLOMON, ARTHUR K. Why Smash Atoms? (Pelican Books, A.141.) Gl. 8vo. Pp. vi +160 +20 plates. (Harmondsworth and New York: Penguin Books, Ltd., 1945.) 9*d*. net.*

Engineering

JUDGE, A. W. Aircraft Engines. Vol. 1. Second edition, revised and enlarged. Demy 8vo. Pp. xii +492. (London: Chapman and Hall, Ltd., 1945.) 28*s*. net.*

MACFARLANE, J. E. Electricity in the House. (Teach Yourself Building Series.) Fcap. 8vo. Pp. 203. (Sevenoaks: English Universities Press, Ltd., 1945.) 3*s*. 6*d*. net.

MOLLOY, E., Edited by. Electrical Installations. Cr. 8vo. Pp. 496. (London: George Newnes, Ltd., 1945.) 10*s*. 6*d*. net.

Chemistry : Chemical Industry

BRITISH PHARMACEUTICAL CODEX, 1934. Seventh Supplement: Additions and Amendments to Parts 1 and 3, with Cumulative Index. Demy 8vo. Pp. iv +133. (London: Pharmaceutical Press, 1945.) 7*s*. 6*d*.*

CAMPBELL, G. A., and WEST, T. F. The Truth about D.D.T. Cr. 8vo. Pp. 64. (London: Findon Publications, 1945.) 1*s*.*

PREGL, FRITZ, Based on the methods of. Quantitative Organic Microanalysis. Fourth English edition, completely revised and edited by Julius Grant. Roy. 8vo. Pp. vii +238. (London: J. and A. Churchill, Ltd., 1945.) 21*s*.*

TROENSEGAARD, N. On the Structure of the Protein Molecule: a Chemical Investigation. Second edition. Med. 8vo. Pp. 126. (Copenhagen: Einar Munksgaard; London: Oxford University Press, 1944.) 14 Danish kr.*

WISHART, G. M., CUTHBERTSON, D. P., and CHAMBERS, J. W. Practical Physiological Chemistry: for Medical Students. Third edition revised. Cr. 8vo. Pp. vii +131. (Glasgow: John Smith and Son (Glasgow), Ltd., 1945.) 7*s*.*

Astronomy

BEET, ERNEST AGAR. A Text Book of Elementary Astronomy. Cr. 8vo. Pp. x +110 +23 plates. (Cambridge: At the University Press, 1945.) 8*s*. 6*d*. net.*

KOURGANOFF, M. V. La part de la mécanique céleste dans la découverte de Pluton. (Extrait du *Bulletin Astronomique*, Tome 12, Fasc. 4, 5, 6.) Roy. 8vo. Pp. 147–330. (Paris: Libr. Gauthier-Villars, 1941.)*

General Biology : Natural History Botany : Zoology

BAKER, JOHN R. Cytological Technique: the Principles and Practice of Methods used to Determine the Structure of the Metazoan Cell. (Methuen's Monographs on Biological Subjects.) Second edition, rewritten and enlarged. Fcap. 8vo. Pp. vii +212. (London: Methuen and Co., Ltd., 1945.) 6*s*. net.*

BISBY, G. R. An Introduction to the Taxonomy and Nomenclature of Fungi. Cr. 8vo. Pp. vii +117. (Kew: Imperial Mycological Institute, 1945.) 5*s*.*

CAULLERY, MAURICE. Biologie des jumeaux (polyembryonie et gémellité). (La science vivante, No. 6.) Cr. 8vo. Pp. 168 +4 plates. (Paris: Presses universitaires de France, 1945.) 80 francs.*

FINNEGAN, SUSAN. Acari: as Agents Transmitting Typhus in India, Australasia and the Far East. (Economic Series, No. 16.) Demy 8vo. Pp. 78. (London: British Museum (Natural History), 1945.) 1*s*. 6*d*.*

GODWIN, H. Plant Biology: an Outline of the Principles underlying Plant Activity and Structure. Fourth edition. Cr. 8vo. Pp. xii +308. (Cambridge: At the University Press, 1946.) 8*s*. 6*d*. net.

HOFFMANN, ADOLPHE. Faune de France. 44: Coleoptères bruchides et anthribides. (Fédération française des Sociétés de Sciences naturelles: Office central de faunistique.) Roy. 8vo. Pp. 184. (Paris: Paul Lechevalier et fils, 1945.) 250 francs.*

JACK, HOMER A. Biological Field Stations of the World. (Chronica Botanica, Vol. 9, No. 1.) Sup. Roy. 8vo. Pp. vi +74. (Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.) 2.50 dollars.*

KELSEY, W. ERIC. The Spell of the Honey Bee. Demy 8vo. Pp. viii +264 +49 plates. (London: Chapman and Hall, Ltd., 1945.) 15*s*. net.*

LOCKLEY, R. M. Birds of the Sea. (King Penguin Books.) Cr. 8vo. Pp. 32 +24 plates. (Harmondsworth and New York: Penguin Books, Ltd., 1945.) 2*s*. net.*

LOWSON, J. M. Textbook of Botany. Ninth edition, revised and largely written by W. O. Howarth and L. G. G. Warne. Demy 8vo. Pp. viii +584 +8 plates. (London: University Tutorial Press, Ltd., 1945.) 12*s*. 6*d*.*

MEE, ARTHUR J. Nature Study Talks for Youngsters: a Collection of Broadcast Talks. Demy 8vo. Pp. 104. (Worcester: Littlebury and Co., Ltd., 1945.) 8*s*. 6*d*. net.*

RHIND, D. The Grasses of Burma. (Published under the authority of the Government of Burma.) Demy 8vo. Pp. 100. (Calcutta: Baptist Mission Press, 1945.) 5 rupees; 7*s*. 6*d*.*

ROSTAND, JEAN. Esquisse d'une histoire de la biologie. Cr. 8vo. Pp. 258 +14 plates. (Paris: Libr. Gallimard, 1945.) 140 francs.*

SÉGUY, EUGÈNE. Faune de France. 43: Insectes ectoparasites (mallophages, anoploures, siphonaptères). (Fédération française des Sociétés de Sciences naturelles, Office central de faunistique.) Roy. 8vo. Pp. 684. (Paris: Paul Lechevalier et fils, 1944.) 800 francs.*

SMITH, STUART. How to Study Birds. Cr. 8vo. Pp. 192 +12 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1945.) 8*s*. 6*d*. net.*

WESENBERG-LUND, C. Fra Sø og Aa. Sup. Roy. 8vo. Pp. 350. (København: Gyldendalske Boghandel, 1945.) 22 kr.*

Agriculture : Horticulture : Forestry

GOUGH, H. C. A Review of the Literature on Soil Insecticides. Sup. Roy. 8vo. Pp. iii +161. (London: Imperial Institute of Entomology, 1945.) 10*s.**

HOPKINS, DONALD P. Chemicals, Humus and the Soil: a Simple Presentation of Contemporary Knowledge and Opinions about Fertilizers, Manures and Soil Fertility. Demy 8vo. Pp. 278 +5 plates. (London: Faber and Faber, Ltd., 1945.) 12*s.* 6*d.* net.*

PERKINS, HAROLD. Poultry Keeping for All. Demy 8vo. Pp. 66 +8 plates. (Worcester: Littlebury and Co., Ltd., 1945.) 7*s.* 6*d.* net.*

SHEPARD, WARD. Food or Famine: the Challenge of Erosion. Ex. Cr. 8vo. Pp. x +225 +16 plates. (New York: The Macmillan Company, 1945.) 3 dollars.*

TAYLOR, WILLIAM LING. Forests and Forestry in Great Britain. Demy 8vo. Pp. x +172 +21 plates. (London: Crosby Lockwood and Son, Ltd., 1945.) 12*s.* 6*d.* net.*

Anatomy : Physiology

BACHARACH, A. L. Science and Nutrition. Second edition. Cr. 8vo. Pp. xii +142. (London: Watts and Co., Ltd. 1945.) 5*s.* net.*

GELLHORN, ERNST. Autonomic Regulations: their Significance for Physiology, Psychology and Neuropsychiatry. Med. 8vo. Pp. xii +373. (New York: Interscience Publishers, Inc., 1942.) 5.50 dollars.*

HARRIS, ROBERT S., and THIMANN, KENNETH V., Edited by. Vitamins and Hormones: Advances in Research and Applications. Vol. 3. Med. 8vo. Pp. xv +420. (New York: Academic Press, Inc., 1945.) 6.50 dollars.*

HEWER, E. E. Textbook of Histology. Reprint of the third edition. Gl. 4to. Pp. viii +364. (London: William Heinemann, Ltd., 1945.) 17*s.* 6*d.* net.

NICHOLLS, LUCIUS. Tropical Nutrition and Dietetics. Second edition, rewritten and enlarged. Demy 8vo. Pp. xii +370 +11 plates. (London: Baillière, Tindall and Cox, 1945.) 27*s.* 6*d.**

WRIGHT, SAMSON. Applied Physiology. Eighth edition. Demy 8vo. Pp. 874. (London: Oxford University Press, 1945.) 30*s.* net.

Anthropology : Archæology

FORTES, MEYER. The Dynamics of Clanship among the Tallensi: being the First Part of an Analysis of the Social Structure of a Trans-Volta Tribe. (Published for the International African Institute.) Demy 8vo. Pp. xx +270 +16 plates. (London, New York and Toronto: Oxford University Press, 1945.) 30*s.* net.*

HIRSCHLER, PIERRE. Anthropoid and Human Endocranial Casts. Roy. 8vo. Pp. ix +150 +11 plates. (Amsterdam: N.V. Noord-Hollandsche Uitgeversmij., 1942.)*

MONTAGU, M. F. ASHLEY. Man's Most Dangerous Myth—The Fallacy of Race. Second edition, revised and enlarged. Demy 8vo. Pp. xvi +304. (New York: Columbia University Press; London: Oxford University Press, 1945.) 22*s.* net.*

RAGLAN, LORD. Death and Rebirth: a Study in Comparative Religion. Cr. 8vo. Pp. vi +106. (London: Watts and Co., Ltd., 1945.) 5*s.* net.*

Philosophy : Psychology

BRAMSTEDT, E. K. Dictatorship and Political Police: the Technique of Control by Fear. (International Library of Sociology and Social Reconstruction.) Demy 8vo. Pp. x +275. (London: Kegan Paul and Co., Ltd., 1945.) 15*s.* net.*

JONES, ABEL J. In Search of Truth. (Discussion Books, No. 79.) Cr. 8vo. Pp. 208. (London and Edinburgh: Thomas Nelson and Sons, Ltd., 1945.) 3*s.* 6*d.* net.*

KOYRÉ, ALEXANDRE. Discovering Plato. Translated by Leonora Cohen Rosenfield. Ex. Cr. 8vo. Pp. xi +119. (New York: Columbia University Press; London: Oxford University Press, 1945.) 10*s.* net.*

PIÉRON, HENRI. L'Année psychologique. (Bibliothèque de philosophie contemporaine.) 41ème et 42ème années (1940–1941). Med. 8vo. Pp. xix +686. (Paris: Presses universitaires de France, 1945.) 500 francs.*

POPPER, K. R. The Open Society and its Enemies. Demy 8vo. Vol. 1: The Spell of Plato. Pp. vii +268. Vol. 2: The High Tide of Prophecy—Hegel, Marx and the Aftermath. Pp. v +352. (London: George Routledge and Sons, Ltd., 1945.) 2 vols., 42*s.* net.*

TAYLOR, F. SHERWOOD. The Fourfold Vision: a Study of the Relations of Science and Religion. Cr. 8vo. Pp. 108. (London: Chapman and Hall, Ltd., 1945.) 6*s.* net.*

Bacteriology : Hygiene

COOKE, R. GORDON. A Summary of Medicine for Nurses: for Use in Revision. Fcap. 8vo. Pp. 104. (London: Faber and Faber, Ltd., 1945.) 3*s.* 6*d.* net.*

HEAF, F. R. G., and McDOUGALL, J. B. Rehabilitating the Tuberculous. Demy 8vo. Pp. xii +142 + 21 plates. (London: Faber and Faber, Ltd., 1945.) 8*s.* 6*d.* net.*

HORDER, LORD, Advisory Editor. Health and Social Welfare, 1945–1946. Demy 8vo. Pp. 520. (London and New York: Todd Publishing Co., Ltd., 1945.) 21*s.* net.*

UNDERWOOD, E. ASHWORTH. A Manual of Tuberculosis: Clinical and Administrative. Third edition, largely rewritten. Cr. 8vo. Pp. xvi +524. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 15*s.* net.*

Miscellany

ALEXANDER, P. Shakespeare's Punctuation. (Annual Shakespeare Lecture of the British Academy, 1945. From the *Proceedings of the British Academy*, Vol. 31.) Roy. 8vo. Pp. 24. (London: Oxford University Press, 1945.) 2*s.* 6*d.* net.*

HONEY, W. B. Science and the Creative Arts. Demy 8vo. Pp. 84. (London: Faber and Faber, Ltd., 1945.) 6*s.* net.*

MARCHANT, SIR JAMES, Edited by. Post War Britain. Demy 8vo. Pp. xv +240 +8 plates. (London: Eyre and Spottiswoode (Publishers), Ltd., 1945.) 12*s.* 6*d.* net.*

MILLER, PAUL. Science in the Seance Room. Gl. 8vo. Pp. 178. (London: Psychic Press, Ltd., 1945.) 7*s.* 6*d.**

NAVILLE, PIERRE. Théorie de l'orientation professionnelle. Cr. 8vo. Pp. 290. (Paris: Libr. Gallimard, 1945.) 135 francs.*

NEEDHAM, JOSEPH. Chinese Science. Demy 8vo. Pp. 80. (London: Pilot Press, Ltd., 1945.) 7*s.* 6*d.* net.*

POTIPHAR. They Must Not Starve. Cr. 8vo. Pp. 107. (London: Victor Gollancz, Ltd., 1945.) 3*s.* 6*d.* net.*

STRATEGICUS. Foothold in Europe: the Campaigns in Sicily, Italy, the Far East and Russia, between July 1943 and May 1944. Demy 8vo. Pp. 243. (London: Faber and Faber, Ltd., 1945.) 10*s.* 6*d.* net.*

SUMNER, FRANCIS B. The Life History of an American Naturalist. Med. 8vo. Pp. vii +298. (Lancaster, Pa.: Jaques Cattell Press, 1945.) 3 dollars.*

TAYLOR, F. SHERWOOD. Science: Past and Present. Cr. 8vo. Pp. viii +275 +22 plates. (London: William Heinemann, Ltd., 1945.) 10*s.* 6*d.* net.*

THOMSON, DAVID, MEYER, E., and BRIGGS, A. Patterns of Peacemaking. (International Library of Sociology and Social Reconstruction.) Demy 8vo. Pp. viii +399. (London: Kegan Paul and Co., Ltd., 1945.) 21*s.* net.*

WHITBY, MORTON. Theory of Life, Disease and Death. Ex. Cr. 8vo. Pp. 275. (Chicago: Cutler Publishing Co., 1945.) 5 dollars.*

WILSON, GODFREY, and WILSON, MONICA. The Analysis of Social Change: based on Observations in Central Africa. Cr. 8vo. Pp. vii +177. (Cambridge: At the University Press, 1945.) 7*s.* 6*d.* net.*

WOODWARD, E. L. Some Political Consequences of the Atomic Bomb: a Public Lecture delivered in the University of Oxford. Demy 8vo. Pp. 22. (London: Oxford University Press, 1945.) 2*s.* net.*

WRIGHT, FRANK LLOYD. An Autobiography. Roy. 8vo. Pp. iv +486 +76 plates. (London: Faber and Faber, Ltd., and the Hyperion Press, Ltd., 1945.) 35*s.* net.*

ULTRA-VIOLET SPECTROPHOTOMETRY

A rapid and accurate instrument for routine or research

THE SPEKKER* ULTRA-VIOLET PHOTOMETER

ADVANTAGES:

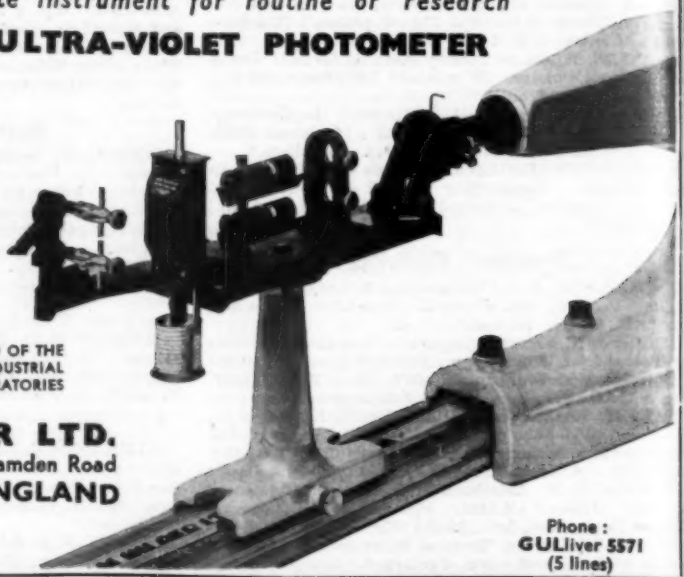
Open scale of densities.

Non-intermittent exposures.

Robust construction.

Self-aligning with Hilger Barfit Spectrographs.

No moving parts.



SUPPLIED TO OVER ONE HUNDRED OF THE WORLD'S MOST IMPORTANT INDUSTRIAL RESEARCH AND ACADEMIC LABORATORIES

ADAM HILGER LTD.
98 St. Pancras Way Camden Road
LONDON N.W.1 ENGLAND

* Regd. Trade Mark in Gt. Britain, U.S.A., Eire, Germany and Japan

Phone: GULliver 5571 (5 lines)

Please ask for particulars of
CHRONOGRAPH RECORDERS
*
BOMB CALORIMETERS
*
SPECIAL TESTING APPLIANCES

G. CUSSONS LTD.
The Technical Works
MANCHESTER, 7

LARGE DEPARTMENT FOR SCIENTIFIC BOOKS

FOYLES
* * FOR BOOKS * *

New and secondhand Books on every subject. Books bought
119-125 CHARING CROSS ROAD, LONDON, W.C.2
Open 9 a.m.—6 p.m. including Saturday
Tele: GERrard 5660 (16 lines)

THE QUARTERLY JOURNAL OF MICROSCOPICAL SCIENCE

No. 340 (Vol. 85, Part IV.) **Price 21s. net**

CONTENTS

Morphology of the Camiophil Material of Rhabdomonas costata, and its behaviour during division. By J. D. Smyth. With 10 Text-figures.

Studies on the Structure, Development, and Physiology of the Nephridia of Oligochaeta. VI. The Physiology of Excretion and the Significance of the Enteronephric Type of Nephridial System in Indian Earthworms. By Karm Narayan Behl. With 7 Text-figures and 11 Tables.

The Supposed Pancreatic Organs of Petromyzon fluviatilis and Myxine glutinosa. By E. J. W. Barrington. With 16 Text-figures.

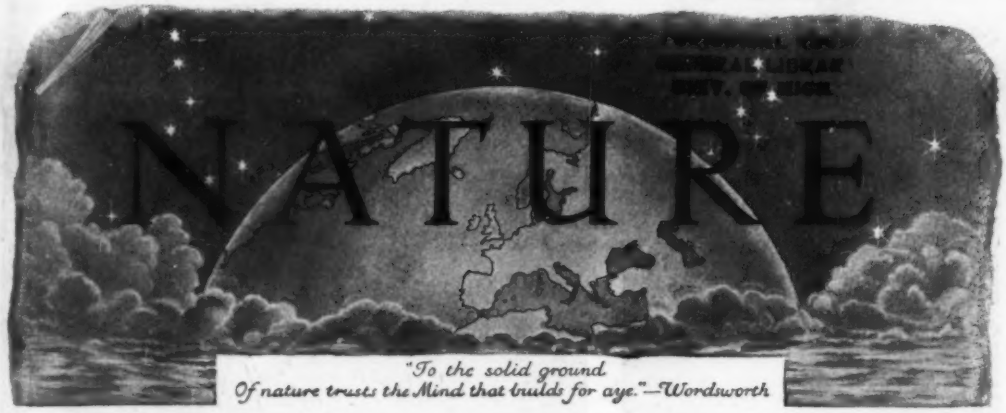
Subscription for a volume of four numbers, post free on issue, **£3 3s. 0d.** *net*

OXFORD UNIVERSITY PRESS
London, E.C.4

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

APR 23 1946

SUPPLEMENT: RECENT SCIENTIFIC and TECHNICAL BOOKS



Vol. 157, No. 3987 SATURDAY, MARCH 30, 1946 ONE SHILLING & SIXPENCE

C. BAKER HIGH HOLBORN LONDON

ESTAB. 1765

GREENOUGH
and
LOW POWER
BINOCULAR
MICROSCOPES
are now available from stock subject to M.O.S. allocation.

Prices and full particulars on application.

C. BAKER, 244 High Holborn, LONDON, W.C.1

Member Scientific Instrument Manufacturers' Assn. of Gt. Britain

CRYSTALLOGRAPHIC ANALYSIS

The
RAYMAX
CRYSTALLOGRAPHIC
X-RAY UNIT

Write for descriptive leaflet 433/7-1

AEI

METROPOLITAN Vickers
ELECTRICAL CO. LTD
TRAFFORD PARK — MANCHESTER 17

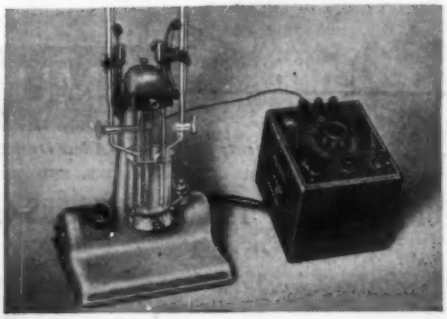
c/8502

MULLARD-B.T.L. POTENTIOMETRIC TITRATION APPARATUS

An entirely new instrument for potentiometric titrations, an outstanding feature of which is the incorporation of an electron beam indicator as an indicating device in place of a needle galvanometer.

The apparatus may be used for all types of oxidation-reduction and acid-alkali titrations, and in a limited manner for certain pH determinations.

Further details on request.



BAIRD & TATLOCK (LONDON) LTD.
14-17 St. CROSS STREET, LONDON, E.C.1

TEST SET TYPE D-30-A

RANGE - -	·001 ohm to 11·11 megohms
DIMENSIONS - -	- 12½" x 9½" x 6"
WEIGHT - - - - -	12 lbs.

A descriptive bulletin will be supplied on request.

A portable test set for general resistance measurements and for fault location on lines and cables—May be used for A.C. tests with suitable power source and detector—Resistance decades and galvanometer can be used externally.

MUIRHEAD

Sole Agents for India :—Adair Dutt & Co. Ltd., London, Calcutta, Bombay, Madras.

MUIRHEAD AND COMPANY LIMITED, ELMERS END, BECKENHAM, KENT. TELEPHONE : BECKENHAM 0041-0042

FOR OVER 60 YEARS DESIGNERS AND MAKERS OF PRECISION INSTRUMENTS

C.R.C. 29

ADSORPTION

By C. L. MANTELL
Consulting Chemical Engineer

386 pages, 8¼ × 5½, 149 illustrations, 78 tables, 27/-

THIS book fully covers the subject of adsorption, emphasizing its unit operation aspects, and covering widely varying fields, such as refining operations, air conditioning, elimination of toxic materials, etc. The commercial adsorbents, such as fuller's earth, activated clays, activated carbons, silica gel, and aluminium oxide base materials, are dealt with, with information on their manufacture, properties and uses.

A good deal of material not available elsewhere in book form is included on materials such as adsorptive carbon, base exchange materials, ion exchangers, gas hydrates, dehydration of natural gas lines, alumina base adsorbents, and mechanical arrangement of these, as well as on the industrial use of solid adsorbents in connection with air conditioning, humidification, and refrigeration.

McGraw-Hill Publishing Co. Ltd.
Aldwych House, London, W.C.2

Books ON PURE AND APPLIED SCIENCE

LARGE STOCK ALWAYS AVAILABLE

Many of the books reviewed or mentioned in this journal are available from stock

Continental and American works unobtainable in this country can be secured under Board of Trade licence in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly
ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.
LONDON: 136 GOWER STREET, W.C.1
Telephone: EUSton 4282 (5 lines)

ARNOLD BOOKS

Lecture Experiments in Optics

By B. K. JOHNSON, F.R.M.S. Describing 80 experiments, with over 90 illustrations. 8s. 6d. net.

Copies are now again available of this widely-appreciated manual, which shows how even the best-known experiments may be presented in a more vivid and telling manner, and suggests many novel demonstrations.

Elementary Microtechnique

By H. A. PEACOCK, M.Sc. *Second Edition.* xii+330 pages, 21 diagrams. 9s. net.

This manual is the vade-mecum of innumerable workers with the microscope. It is worth while having the *second* edition, which contains more material for both beginner and advanced worker, and is arranged even more usefully for ready reference.

REAPPEARING IN JULY

SCIENCE PROGRESS

A Quarterly Review of Scientific Thought, Work and Affairs

Science Progress was founded in 1907 by Sir Ronald Ross, and right up to the war maintained a place second only to that of *Nature* among British scientific journals: it had a particularly wide circulation among scientific institutes and libraries abroad.

It resumes quarterly publication on July 1, with all its old features and some improvements. Besides a varied selection of authoritative articles, each designed to appeal to scientists whose speciality lies in other directions, there will be expert surveys of Recent Advances in all branches of science; and reviews of all the current scientific books.

Each number about 200 pp., 9¼ in. × 6 in., illustrated. 7s. 6d. net per copy. Annual postal subscription anywhere in the world, 31s. 2d.

Descriptive leaflet on request.

An Introduction to

Physical Anthropology

By E. P. STIBBE, F.R.C.S., Second Edition. viii+230 pages, 56 illustrations. 10s. 6d. net.

The Arachnida

By THEODORE H. SAVORY, M.A. 10 in. ×7½ in. xii+218 pages with 99 drawings and 8 plates. 25s. net.

"To the naturalist it is a stimulating mine, to the zoologist a most valuable work of reference."—*Discovery.*

A Text-book of

Practical Entomology

By F. BALFOUR-BROWNE, M.A., F.R.S.E., F.L.S., 10 in. ×7½ in. With 116 original illustrations by the Author. 18s. net.

"It deals chiefly with the morphology of insects, with the addition of many details of the best technique for the study of the subject. It should prove equally valuable for the teacher and the student."—*Review of Applied Entomology.*

Descriptive Leaflets and new Scientific List post free

EDWARD ARNOLD & Co.
41 & 43, MADDOX ST. LONDON, W.1

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

AITKEN, A. C. Statistical Mathematics. (University Mathematical Texts.) Fourth edition. Cr. 8vo. Pp. 162. (Edinburgh and London: Oliver and Boyd, 1946.) 5*s*. net.

BRITISH STANDARDS INSTITUTION. Polarographic and Spectrographic Analysis of High Purity Zinc and Zinc Alloys for Die Casting. An Account of the Investigations carried out by a British Standards Institution Panel of the Non-Ferrous Industry Committee 1941–44. Roy. 8vo. Pp. ix +117. (London: H.M. Stationery Office, 1945.) 5*s*. net.*

CLARK, JOHN B. Mathematical and Physical Tables. Twenty-first edition. Cr. 8vo. Pp. 50. (Edinburgh and London: Oliver and Boyd, 1946.) 1*s*. net.

ELLENWOOD, E. O., and MACKEY, C. O. Thermodynamic Charts. Second edition. Demy 4to. Pp. iv +46. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 16*s*. 6*d*. net.

LEWER, S. K. The Cathode-Ray Tube Handbook. Cr. 8vo. Pp. 100. (London: Sir Isaac Pitman and Sons, Ltd., 1945.) 6*s*. net.*

SLADE, S., and MARGOLIS, L. Mathematics for Technical and Vocational Schools. Second edition. Cr. 8vo. Pp. xiii +517. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 15*s*. net.

ZACHARIASEN, W. H. Theory of X-Ray Diffraction in Crystals. Demy 8vo. Pp. vi +255. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 24*s*. net.

Engineering

BLAKE, E. H. Drainage and Sanitation. Seventh edition, revised by W. R. Jenkins. Cr. 8vo. Pp. 564. (London: B. T. Batsford, Ltd., 1945.) 15*s*. net.

CRARY, G. B. Power System Stability. Vol. 1. Demy 8vo. Pp. xii +292. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 24*s*. net.

DE FOREST, L. Television To-day and To-morrow. Demy 8vo. Pp. 176. (London: Hutchinson and Co. (Publishers), Ltd., 1945.) 16*s*. net.

HENNEY, KEITH. Principles of Radio. Fifth edition. Cr. 8vo. Pp. viii +534. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 21*s*. net.

MOLLOY, E., Edited by. Electrical Installations. Cr. 8vo. Pp. 496. (London: George Newnes, Ltd., 1945.) 10*s*. 6*d*. net.

MUHLENBRUCH, CARL W. Testing of Engineering Materials. Med. 8vo. Pp. vii +200. (New York: D. Van Nostrand Co.; London: Chapman and Hall, Ltd., 1945.) 15*s*. net.

RABER, B. F., and HUTCHINSON, F. W. Refrigeration and Air Conditioning Engineering. Med. 8vo. Pp. vii +291. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 24*s*. net.

SHEPPARD, RICHARD. Cast Iron in Building. Cr. 8vo. Pp. 146. (London: George Allen and Unwin, Ltd., 1945.) 7*s*. 6*d*. net.

STEVENS, N., and HAMILTON, A. Amateur Radio Simply Explained. Cr. 8vo. Pp. 28. (London: Short Wave Press, 1945.) 1*s*. 3*d*. net.

STUART, A. H., Edited by. Practical Engineers' Pocket Book, 1946. Cr. 16mo. Pp. 780. (London: Oxford University Press, 1946.) 3*s*. 6*d*. net.

TAYLOR, E. OPENSHAW. Distribution and Utilisation of Electricity. Med. 8vo. Pp. 162. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1945.) 6*s*. net.

YOUNG, S. J., and PRYER, R. W. The Testing of Internal Combustion Engines. Demy 8vo. Pp. 216. (Sevenoaks: English Universities Press, Ltd., 1945.) 8*s*. 6*d*. net.

Chemistry : Chemical Industry

ARMSTRONG, E. FRANKLAND, and MIALL, L. MACKENZIE. Raw Materials from the Sea. Demy 8vo. Pp. xi +164 +21 plates. (Leicester: Constructive Publications, Ltd., 1945.) 15*s*. net.*

CUMMING, ALEX. C., and KEY, S. A. A Textbook of Quantitative Chemical Analysis. Ninth edition, revised by F. C. Guthrie and J. T. Nance. Med. 8vo. Pp. 532. (Edinburgh and London: Gurney and Jackson, 1945.) 18*s*. 6*d*. net.

LOWRY, H. M., Edited by. Chemistry of Coal Utilization. 2 vols. Demy 8vo. Vol. 1. Pp. xiii +920. Vol. 2. Pp. 948. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1946.) £6 net.

MARSH, J. T., and WOOD, F. C. An Introduction to the Chemistry of Cellulose. Third edition revised. Demy 8vo. Pp. xii +525 +23 plates. (London: Chapman and Hall, Ltd., 1945.) 32*s*. net.*

MITCHELL, J. A. Quantitative Chemistry. Demy 8vo. Pp. 70. (London: George Allen and Unwin, Ltd., 1945.) 5*s*. 6*d*.

WALTON, A. Chemistry: a Shorter Course. Second edition. Cr. 8vo. Pp. 208. (London: Sir Isaac Pitman and Sons, Ltd., 1946.) 4*s*. 6*d*.

WINTON, ANDREW L., and WINTON, KATE B. Analysis of Foods. Med. 8vo. Pp. xii +1000. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 72*s*. net.

Technology

ABRAHAM, HERBERT. Asphalts and Allied Substances: their Occurrence, Modes of Production, Uses in the Arts and Methods of Testing. Fifth edition. 2 vols. Demy 8vo. Vol. 1. Pp. xviii +888. Vol. 2. Pp. vii +1253. (New York: D. Van Nostrand Co., London: Chapman and Hall, Ltd., 1945.) £5 net.

D'ALELIO, G. F. A Laboratory Manual of Plastics and Synthetic Resins. Demy 4to. Pp. vii +134. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 12*s*. net.

BARDIN, I., BROUEVITSCH, N., TERPYGOREV, A., WEITZ, W., and KOUDRYAFTZEV., A., Edited by. Twenty-five Years of Soviet Technique. (In Russian.) Sup. Roy. 8vo. Pp. 208. (Moscow and Leningrad: Academy of Sciences of the U.S.S.R., 1945.) 20 roubles.*

COX, DORIS, and WEISMANN, B. W. Creative Hands: an Introduction to Craft Technique. 4to. Pp. xi +294. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 22*s*. 6*d*. net.

EMANUEL, W. D., Focal Lighting Chart. Cr. 16mo. Pp. 24. (London and New York: Focal Press, Ltd., 1945.) 2*s*. 6*d*. net.

HALL, H. J. Steel Hardening, Tempering and Annealing. Fcap. 8vo. Pp. 160. (London: George Newnes, Ltd., 1945.) 6*s*. net.

RATZERSDORFER, JULIUS. Die Knickfestigkeit von Stäben und Stabwerken. (Wien: Julius Springer, 1936.) (Published and distributed in the Public Interest by authority of the Alien Property Custodian under License No. A.265.) Med. 8vo. Pp. ix +322. (Ann Arbor, Mich.: Edwards Brothers, Inc., 1944.) 8.80 dollars.*

ROLFE, R. T. A Dictionary of Metallography. Demy 8vo. Pp. viii +342. (London: Chapman and Hall, Ltd., 1945.) 15*s*. net.*

SINGLETON-GREEN, J. Limestone Concrete. Demy 8vo. Pp. 88 +9 plates. (London: Chapman and Hall, Ltd., 1945.) 8*s*. 6*d*. net.

Astronomy

FLAMMARION, CAMILLE. Annuaire astronomique et météorologique pour 1946. (82e année.) Cr. 8vo. Pp. 382. (Paris: Ernest Flammarion, 1946.) 125 francs.*

Geography : Travel

BRIGGS, M. S. Round the Shires. Demy 8vo. Pp. 308. (London: Herbert Jenkins, Ltd., 1945.) 15*s*. net.

COLES, S. F. A. Spain Everlasting. Demy 8vo. Pp. 248. (London: Hollis and Carter, Ltd., 1945.) 18*s*. net.

COTTON, C. A. Living on a Planet: an Introduction to Physical Geography. Demy 8vo. Pp. 48. (Melbourne, Auckland and London: Whitcombe and Tombs, Ltd., 1945.) 2*s*. 6*d*. net.

HAILEY, LORD. An African Survey. Second edition. Demy 8vo. Pp. 1870. (London: Oxford University Press, 1945.) 35*s*. net.

JENKINS, A. K. HAMILTON. Cornwall and its People. Cr. 8vo. Pp. 500. (London: J. M. Dent and Sons, Ltd., 1945.) 12*s*. 6*d*. net.

PALMER, W. T. Wanderings in Lakeland. Cr. 8vo. Pp. 144. (London: Skeffington and Son, Ltd., 1945.) 9*s*. 6*d*. net.

TURIN, S. P. The U.S.S.R. Second revised edition. Demy 8vo. Pp. 234. (London: Methuen and Co., Ltd., 1946.) 16*s*. net.

General Biology : Natural History
Botany : Zoology

BURROWS, HAROLD. Biological Actions of Sex Hormones. Sup. Roy. 8vo. Pp. x+514. (Cambridge: At the University Press, 1945.) 42*s*. net.*

DARLINGTON, C. D., and JANAKI AMMAL, E. K. Chromosome Atlas of Cultivated Plants. Cr. 8vo. Pp. 398. (London: George Allen and Unwin, Ltd., 1945.) 12*s*. 6*d*. net.*

DAVIDSON, GLADYS. Wonderful Living Things. Cr. 8vo. Pp. 215. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1945.) 5*s*. net.

HUTCHINSON, JOHN. A Botanist in Southern Africa. Roy. 8vo. Pp. xii+686+49 plates. (London: P. R. Gawthorn, Ltd., 1946.) 45*s*. net.*

MORSE, RICHARD. Life in Pond and Stream. (Chameleon Series.) Cr. 8vo. Pp. 80. (London: Oxford University Press, 1945.) 2*s*. 6*d*. net.

SHORTEN, M. Wonders of Animal Life. (Puffin Picture Books.) Oblong Cr. 4to. Pp. 32. (Harmondsworth and New York: Penguin Books, Ltd., 1945.) 9*d*. net.

STUART, F. S. Bee-Keeping Practice. Cr. 8vo. Pp. 208. (London: C. Arthur Pearson, Ltd., 1945.) 5*s*. net.

VEVERS, G. M. The Story of a King Penguin. Fcap. 8vo. Pp. 32. (London: Trans-atlantic Art Co., Ltd., 1945.) 3*s*. 6*d*. net.

WHITE, M. J. D. Animal Cytology and Evolution. Med. 8vo. Pp. viii+375. (Cambridge: At the University Press, 1945.) 36*s*. net.*

Agriculture : Horticulture : Forestry

BAKER, J. O. . . . and a Garden. Cr. 8vo. Pp. 122. (London: John Gifford, Ltd., 1945.) 6*s*. net.

DARLING, F. FRASER. Crofting Agriculture: its Practice in the West Highlands and Islands. Cr. 8vo. Pp. 176. (Edinburgh and London: Oliver and Boyd, 1945.) 6*s*. net.

HALL, SIR A. D., the late. The Soil: an Introduction to the Scientific Study of the Growth of Crops. New and revised edition by G. W. Robinson. Cr. 8vo. Pp. xiv+322. (London: John Murray, 1945.) 9*s*. net.*

HALL, SIR A. D., the late. The Feeding of Crops and Stock: an Introduction to the Science of the Nutrition of Plants and Animals. Third edition. Cr. 8vo. Part 1: The Plant. Revised by W. G. Ogg. Pp. x+120. Part 2: Soils and Fertilisers. Revised by W. G. Ogg. Pp. ix+114. Part 3: The Nutrition of Animals and Man. Revised by John Hammond. Pp. xi+116. (London: John Murray, 1944.) 4*s*. net each Part.*

MACSELF, A. J., Edited by. Amateur Gardening Annual. Cr. 4to. Pp. 112. (London: W. H. and L. Collingridge, Ltd., 1945.) 3*s*. 6*d*. net.

MASSINGHAM, H. J. The Wisdom of the Fields. Demy 8vo. Pp. 256. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1945.) 12*s*. 6*d*. net.

SHEWELL-COOPER, W. E. Soil, Humus and Health. Cr. 8vo. Pp. 84. (London: John Gifford, Ltd., 1945.) 5*s*. net.

SPENCER, G. L., and MEADE, G. P. Cane Sugar Handbook: a Manual for Cane Sugar Manufacturers and their Chemists. Eighth edition. Demy 8vo. Pp. xiv+834. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 45*s*. net.

WORK, PAUL. Vegetable Production and Marketing. Cr. 8vo. Pp. ix+560. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1945.) 16*s*. 6*d*. net.

Anatomy : Physiology

BELL, GEORGE. Physiology, (Catechism Series.) Part 3. Sixth edition. Cr. 8vo. Pp. 72. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 1*s*. 6*d*. net.

IRVING, A. S. Anatomy Mnemonics. Fourth edition, revised by Alistair G. Smith. Demy 32mo. Pp. 133. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 1*s*. 6*d*. net.

JAMIESON, E. B. Illustrations of Regional Anatomy. Sixth edition. Gl. 4to. Part 1: Central Nervous System. 51 plates. 12*s*. net. Part 2: Head and Neck. 64 plates. 15*s*. net. Part 3: Abdomen. 44 plates. 10*s*. net. Part 4: Pelvis. 35 plates. 8*s*. 6*d*. net. Part 4: Thorax. 32 plates. 7*s*. 6*d*. net. Part 6: Upper Limb. 42 plates. 10*s*. net. Part 7: Lower Limb. 52 plates. 12*s*. net. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) Complete, 75*s*. net.

WHITTAKER, C. R. Anatomy. (Catechism Series.) Sixth edition. Cr. 8vo. Part 2: Lower Extremity. Pp. 80. Part 4: Abdomen. Pp. 84. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 1*s*. 6*d*. net each part.

Philosophy : Psychology

CURRAN, DESMOND, and GUTTMANN, ERIC. Psychological Medicine: a Short Introduction to Psychiatry with an Appendix on Psychiatry associated with War Conditions. Second edition. Demy 8vo. Pp. viii+246. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 10*s*. 6*d*. net.

OAKLEY, C. A. Men at Work: Industrial Psychology in the Factory. Gl. 8vo. Pp. 302. (Bickley: University of London Press, Ltd., 1945.) 8*s*. 6*d*. net.

WEST, RANYARD. Psychology and World Order. (Pelican Books.) Gl. 8vo. Pp. 128. (Harmondsworth and New York: Penguin Books, Ltd., 1945.) 9*d*. net.

Bacteriology : Hygiene

BABSKY, E. B., KOCHERGIN, F. G., and PARM, V. V. Microbiology and Epidemiology. Translated from the Russian by H. P. Fox. Demy 8vo. Pp. 158. (London: Hutchinson and Co. (Publishers), Ltd., 1945.) 15*s*. net.

BAUMGARTNER, J. G. Canned Foods: an Introduction to their Microbiology. Second edition. Cr. 8vo. Pp. 252. (London: J. and A. Churchill, Ltd., 1945.) 12*s*. 6*d*.

FRAZER, WM., and STALLYBRASS, C. O. Textbook of Public Health. Eleventh edition. Demy 8vo. Pp. 582. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 25*s*. net.

GUY, JOHN, and LINKLATER, G. J. I. Hygiene for Nurses. Sixth edition. Cr. 8vo. Pp. viii+240. (Edinburgh: E. and S. Livingstone, Ltd., 1945.) 5*s*. net.

Miscellany

CHARLES, EDWARD. Freedom from Want: the International Aspect. (Looking Forward Pamphlets, No. 5.) Cr. 8vo. Pp. 60. (London and New York: Royal Institute of International Affairs, 1945.) 1*s*. net.*

HOWARD, PETER. Ideas Have Legs. Second edition. Cr. 8vo. Pp. 190. (London: Frederick Muller, Ltd., 1945.) 7*s*. 6*d*. net.*

KYZNEZOV, B. G. Lomonosov, Loyachevskiya, Mendeleev: Ocherktz zhizni i mirovozreniy. Ex. Cr. 8vo. Pp. 334. (Moscow and Leningrad: Akademi Nauk U.S.S.R., 1945.) 22 roubles.*

A COMPACT GALVANOMETER OUTFIT FOR WORKSHOPS, LABORATORIES, OR SCHOOLS

May be operated from MAINS or BATTERY

Resistance (Ohms)	Scale Length (mm.)	Sensitivity mm. on scale per μA	Period (secs.)	External Resistance to give critical damping (Ohms)
20	160	19	2	150
50	160	30	2	500
450	160	170	2	14,000

CAMBRIDGE SPOT GALVANOMETER

This comprises an exceptionally robust and sensitive reflecting galvanometer mounted together with a suitable lamp and radial scale in a compact case, effecting a considerable saving in space, and eliminating the trouble of setting up. It requires no special levelling and is not affected by ordinary vibration.

For further details write for

LIST 167 c-N

CAMBRIDGE INSTRUMENT CO. LTD.

WORKS:- LONDON & CAMBRIDGE — Head Office & Showrooms:- 13 GROSVENOR PLACE LONDON, S.W.1.

"ROSS" PRISMATIC BINOCULARS

THE NEW 7×50 £34/7/- and 7×30 £28/18/9
6×30 "WRAY" £13/10/0
DELIVERY FROM STOCK

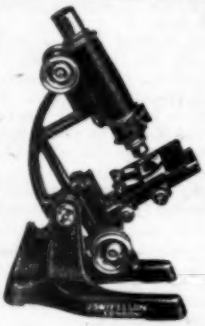
OUR FAMOUS 3" ASTRONOMICAL TELESCOPE
ON GARDEN STAND, 60 x EYEPIECE £25

EXTRA EYEPIECES 42/- EACH
STAR FINDERS 2" 75/-, 1" 90/-

TELESCOPES, MICROSCOPES & BINOCULARS WANTED FOR CASH

Note name and address:

BROADHURST, CLARKSON & CO. LTD.
63 Farringdon ROAD, London, E.C.1
(3 minutes from Farringdon Street Metro. Station)



JAMES
SWIFT
& SON LTD.

Manufacturers of
MICROSCOPES for
BIOLOGY, MINERALOGY, METALLURGY, PHOTOMICROGRAPHIC & PROJECTION APPARATUS, GONIOMETERS, REFRACTOMETERS, SPECTROMETERS, OPTICAL MEASURING & TESTING APPARATUS, POLARISING PRISMS & OPTICAL ELEMENTS

REPAIRS TO ANY MAKE OF ABOVE INSTRUMENTS

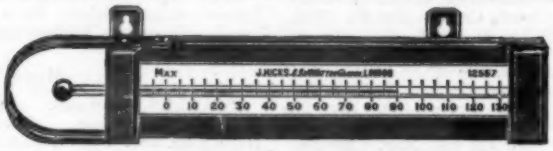
Owing to prevailing conditions delivery cannot always be guaranteed

81 Tottenham Court Road
London, W.1

METEOROLOGICAL INSTRUMENTS

OF ALL KINDS—STANDARD AND RECORDING

STANDARD MAXIMUM AND MINIMUM THERMOMETERS



As supplied to the Meteorological Office and used on all Scientific Expeditions

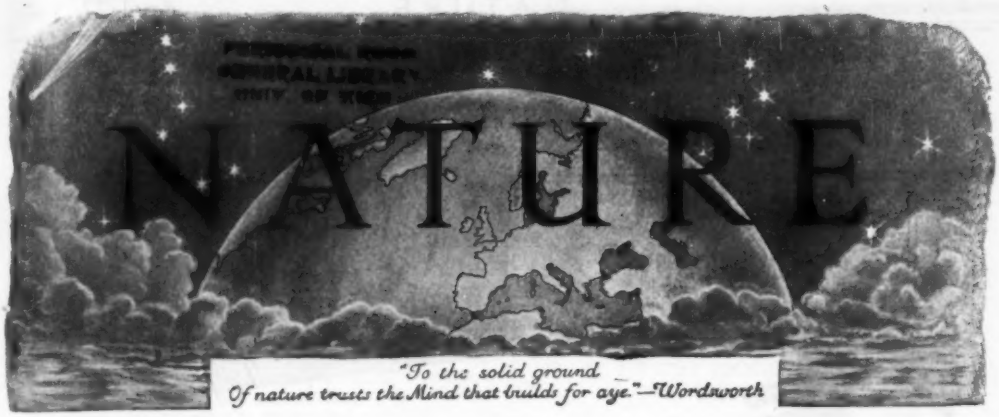
JAMES J. HICKS
(Incorporated with W. F. Stanley & Co. Ltd.)

8, 9, & 10, HATTON GARDEN, LONDON, E.C.1, ENGLAND

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

MAY 1 6 1946

SUPPLEMENT: RECENT SCIENTIFIC and TECHNICAL BOOKS



Vol. 157, No. 3991 SATURDAY, APRIL 27, 1946 ONE SHILLING & SIXPENCE

THE
"BRITISH" EPIDIASCOPE
Purchase Tax Removed!

The coolest Epidiascope in the world.

Many unique features.

PRICE
£75

Full details on application.

C. BAKER (Estab. 1745), 244 High Holborn, LONDON
Member Scientific Instrument Manufacturers' Association of Gt. Britain

The METROVICK
Velometer

a precision instrument for measuring the flow of air and adaptable to all specialised requirements

Send for leaflet 437/1-1.

METROPOLITAN Vickers
ELECTRICAL CO LTD
TRAFFORD PARK MANCHESTER 17

CV/301

"OVERSEER" MICROSCOPE
A Laboratory or Workshop Instrument

40 × Magnification
0·2" Field

Two interchangeable systems of illumination for oblique lighting of surface under examination.

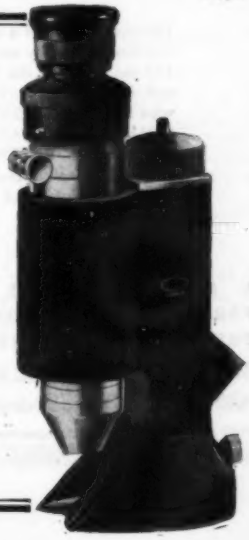
• • •

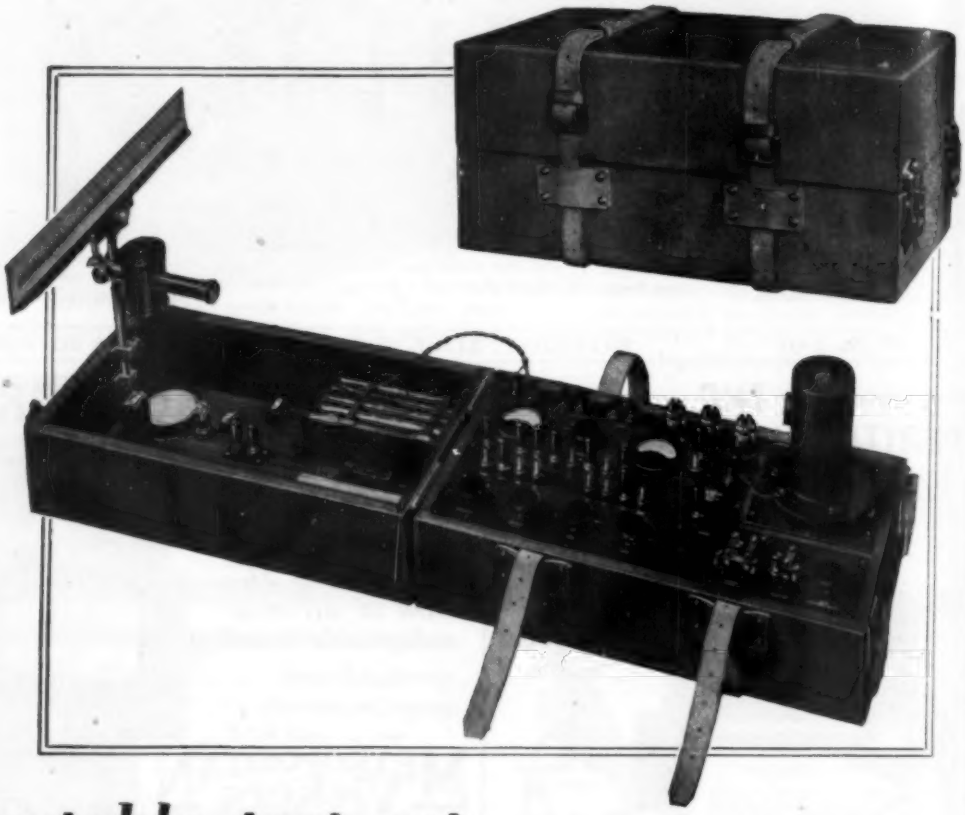
Full particulars from:

BAIRD & TATLOCK (LONDON) LTD.

All correspondence to:
"Halidon", Claremont Lane,
Esher, Surrey

Reg. Office:
14-17 St. CROSS STREET,
LONDON, E.C.1





Portable test set Type D·32·A

This set constitutes a complete self-contained equipment for measurement of conductor resistance, dielectric resistance, capacity and for fault location on telegraph and telephone lines and cables.

The set contains the following comprehensive equipment: BRIDGE NETWORK comprising variable ratios and 4-decade measuring arm—TWO GALVANOMETERS (Pointer type and sensitive mirror galvanometer) with 10-position-UNIVERSAL SHUNT, SHORT CIRCUIT KEY and REVERSING SWITCH—RESISTANCE and CAPACITY STANDARDS for determining galvanometer constants—66-volt. TESTING BATTERY, BATTERY RESISTANCE, REVERSING KEY, MILLIAMMETER-PLUG and COMMUTATOR for selecting test circuits. Mounted in leather bound teak case with all accessories, spare parts and repair kit — Illustrations show the instrument closed and set up for use.

DIMENSIONS Closed, 24 in. x 12½ in. x 11½ in. deep.
WEIGHT 56 lbs.

A DESCRIPTIVE BULLETIN WILL BE SUPPLIED ON REQUEST

FOR OVER 60 YEARS DESIGNERS AND MAKERS OF PRECISION INSTRUMENTS.

MUIRHEAD & CO. LTD., ELMERS END, BECKENHAM, KENT. Telephone: Beckenham 0041-0042

Sole Agents for Sweden: Ingeniorsfirma Hugo Tillquist, Nybrokajen 7, Stockholm 7. Post Box 7026.

MUIRHEAD

C.R.

INTRODUCTION TO PHYSICS

By HARLEY HOWE

Professor of Physics, Cornell University

559 pages, 9 × 6, illustrated, 22s. 6d. net

UNUSUAL precision of statement and clarity of concept make this new book admirably suited as a course in physics for non-technical students. A thoroughly articulated presentation of the subject is maintained, adhering to the traditional order in Mechanics, and to the general order of Mechanics, Sound, Heat, Electricity and Light. The discussions are related to everyday experience or to simple proposed demonstrations when familiar experience is too complex. Trigonometry is not used. A feature of the text is the wealth of exercises, questions and problems, and summaries.

The approach to electricity emphasizes the practical aspects of the subject, and currents are stressed throughout the entire discussion. Static electricity is introduced for its essential vocabulary; magnetism is made incidental and is described as a result of intra-atomic currents.

McGraw-Hill Publishing Co. Ltd.

Aldwych House, London, W.C.2

Books ON PURE AND APPLIED SCIENCE

LARGE STOCK ALWAYS AVAILABLE

Many of the books reviewed or mentioned in this journal are available from stock

Continental and American works unobtainable in this country can be secured under Board of Trade licence in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly

ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.

LONDON: 136 GOWER STREET, W.C.1

Telephone: EUSton 4282 (5 lines)

Reappearing on July 1st

SCIENCE PROGRESS

A Quarterly Review of Scientific Thought, Work and Affairs

Edited by

Sir EDWARD SALISBURY, C.B.E., F.R.S.,
D. ORSON WOOD, M.Sc., A.R.C.Sc.,
F. P. DUNN, B.Sc., F.R.I.C.

SCIENCE PROGRESS is resuming in July its record of the main trends of thought and the new achievements in all branches of science. The principal articles aim at appealing to those whose speciality lies elsewhere or who have a general knowledge of science; the expert surveys of *Recent Advances* provide the best method of keeping abreast of modern research, and the reviews form, as in the past, an invaluable guide to librarians throughout the world.

CONTENTS FOR JULY

Atomic Energy Sir Charles Darwin, K.B.E., F.R.S.
The Variation in Reproductive Capacity of Plants Sir Edward Salisbury, C.B.E., F.R.S.
Physical States of Aggregation E. J. Bowen, M.A., F.R.S.
Some Aspects of the Geology of Water Supply Prof. P. G. H. Boswell, D.Sc., F.R.S.
Our First Astronomer Royal: The Tercentenary of John Flamsteed A. Armitage, M.Sc.
The Walden Inversion Prof. E. D. Hughes, D.Sc.
The New Optical Glasses H. W. Lee
A "Directive" Philosophy of Paintings F. I. G. Rawlins, M.Sc.

RECENT ADVANCES:

ASTRONOMY (*Dr. A. Hunter*); PHYSICS (*Dr. F. A. Vick*); METEOROLOGY (*Prof. P. A. Sheppard*); GENERAL AND ORGANIC CHEMISTRY (*Dr. O. L. Brady*); BIOCHEMISTRY (*Dr. W. O. Kermack, F.R.S.*); GEOLOGY (*Dr. G. W. Tyrrell*); ZOOLOGY (*Dr. W. Holmes*); ENTOMOLOGY (*Dr. A. D. Lees*).

ESSAY REVIEW AND OTHER REVIEWS

Published on the 1st of July, October, January and April. Each number about 200 pages, 9¼" × 6", illustrated, 7s. 6d. net. *Annual Postal Subscription anywhere in the world*, 31s. 2d. through any bookseller.

EDWARD ARNOLD & CO

London: 41 Maddox Street, W.1

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

KELLAWAY, F. W. Splitting the Atom. Cr. 8vo. Pp. 32. (Bognor Regis: John Crowther, Ltd., 1946.) 1*s*. 3*d*. net.

RAILSTON, W. Teach Yourself Physics. (Teach Yourself Series.) New edition. Gl. 8vo. Pp. 188. (Sevenoaks: English University Press, Ltd., 1945.) 3*s*. 6*d*. net.

ROBSON, A. The Earth and the Sky: Elementary Mathematics. Cr. 8vo. Pp. 64. (London: G. Bell and Sons, Ltd., 1945.) 2*s*. 6*d*.

Engineering

JONES, E. J. H. Production Engineering: Jig and Tool Design. Fourth edition. Med. 8vo. Pp. 324. (London: George Newnes, Ltd., 1945.) 17*s*. 6*d*. net.

PIDDUCK, F. B. Currents in Aerials and High-Frequency Networks. Demy 8vo. Pp. iii +98. (Oxford: Clarendon Press; London: Oxford University Press, 1946.) 8*s*. 6*d*. net.*

RAPSON, E. T. A. Problems in Radio Engineering. Sixth revised edition. Cr. 8vo. Pp. 158. (London: Sir Isaac Pitman and Sons, Ltd., 1945.) 5*s*. net.

SCOWEN, F. An Introduction to the Theory and Design of Electric Wave Filters. Demy 8vo. Pp. xi +164. (London: Chapman and Hall, Ltd., 1945.) 15*s*. net.*

SMITH, A. FUNGE. Introduction to Marine Engineering. Cr. 8vo. Pp. 158. (London: Edward Arnold and Co., 1945.) 5*s*. net.*

WHEELER, H. R. Modern Underground Haulage Systems. Demy 4to. Pp. 66. (London: Charles Griffin and Co., Ltd., 1946.) 18*s*. net.

WILLOUGHBY, E. P. How a Car Works. (Modern Car Easy Guide Series.) New edition. Gl. 8vo. Pp. 64. London: Temple Press, Ltd., 1945.) 1*s*. 6*d*. net.

Chemistry : Chemical Industry

HEUSER, EMIL. The Chemistry of Cellulose. Demy 8vo. Pp. v +660. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1944.) 7.50 dollars.*

JØRGENSEN, HOLGER. Studies on the Nature of the Bromate Effect. Sup. Roy. 8vo. Pp. 435. (Copenhagen: Einar Munksgaard; London: Oxford University Press, 1945.) 40 kr.; 40*s*.*

KINGZETT'S Chemical Encyclopaedia: a Digest of Chemistry and its Industrial Applications. Revised and edited by Ralph K. Strong. Seventh edition. Demy 8vo. Pp. x +1092. (London: Baillière, Tindall and Cox, 1945.) 45*s*.*

LYMAN, R. A., Edited by. American Pharmacy: Fundamental Principles and Practices, Pharmaceutical Preparations, Biologicals. Cr. 4to. Pp. 540. (Philadelphia and London: J. B. Lippincott Co., 1946.) 50*s*. net.

MITRA, S. K. Active Nitrogen: a New Theory. (Joykissen Mookerjee Medal Lecture for 1945.) Med. 8vo. Pp. vi +73. (Calcutta: Indian Association for the Cultivation of Science, 1945.)*

PIGMAN, W. W., and WOLFRAM, M. L., Edited by. Advances in Carbohydrate Chemistry. Vol. 1. Med. 8vo. Pp. xii +374. (New York: Academic Press, Inc., 1945.) 6 dollars.*

PILCHER, RICHARD B., and BUTLER-JONES, FRANK. What Industry Owes to Chemical Science. Third edition, based on the scheme of the first and second editions. Demy 8vo. Pp. viii +372 +13 plates. (Cambridge: W. Heffer and Sons, Ltd., 1945.) 18*s*. net.*

WEYGAND, CONRAD. Organic Preparations. Translated and revised from the German Text. (Published and distributed in the Public Interest with the consent of the Alien Property Custodian under Licence No. A.-6.) Med. 8vo. Pp. xiii +534. (New York: Interscience Publishers, Inc., 1945.) 6 dollars.*

Technology

FANSTONE, R. M. All about Photos in the Garden. New edition. Fcap. 8vo. Pp. 56. (London and New York: Focal Press, Ltd., 1945.) 1*s*. 6*d*. net.

FRERK, F. W. All about Improving Negatives. New edition. Fcap. 8vo. Pp. 56. (London and New York: Focal Press, Ltd., 1945.) 1*s*. 6*d*. net.

GREENWOOD, H. W. All about Copying. New edition. Fcap. 8vo. Pp. 56. (London and New York: Focal Press, Ltd., 1945.) 1*s*. 6*d*. net.

HEDLEY, W. H. The Basis of Sheet Metal Drafting. Demy 8vo. Pp. 118. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1945.) 6*s*. net.

KOLMER, J. A., and BOERNER, F. Approved Laboratory Technique. Fourth revised edition. Cr. 4to. Pp. 1070. (London and New York: D. Appleton-Century Co., 1945.) 50*s*. net.

MATTHIAS, A. J. How to Design and Install Plumbing. Demy 8vo. Pp. 442. (Kingston Hill: Technical Press, Ltd., 1945.) 21*s*. net.

MITCHELL, C. AINSWORTH. A Scientist in the Criminal Courts. Cr. 8vo. Pp. viii +144. (London: Chapman and Hall, Ltd., 1945.) 8*s*. 6*d*. net.*

NELSON, J. H., and SILMAN, H. The Application of Radiant Heat to Metal Finishing. Second revised edition. Demy 8vo. Pp. xi +91. (London: Chapman and Hall, Ltd., 1945.) 8*s*. 6*d*. net.

SIMON, W. H., Edited by. American Arc Welding Patents. Vol. 1: Materials, Accessories. Demy 4to. Pp. 574. (London: Bailey Bros. and Swinfen, Ltd., 1945.) £10 10*s*. net.

WADENOYEN, H. VAN. All about Daylight Indoors. New edition. Fcap. 8vo. Pp. 56. (London and New York: Focal Press, Ltd., 1945.) 1*s*. 6*d*. net.

Meteorology : Geophysics

HOLMBOE, JORGEN, FORSYTHE, GEORGE E., and GUSTEN, WILLIAM. Dynamic Meteorology. Demy 8vo. Pp. xvi +378. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1946.) 27*s*. net.

TINN, ARNOLD B. This Weather of Ours. Demy 8vo. Pp. 148. (London: George Allen and Unwin, Ltd., 1946.) 10*s*. 6*d*. net.*

Geography : Travel

HORRABIN, J. F., and GREGORY, J. S. An Atlas of the U.S.S.R. Vol. 1. Cr. 4to. Pp. 64. (Harmondsworth and New York: Penguin Books, Ltd., 1946.) 1*s*. net.

PALMER, MERVYN G. Through Unknown Nicaragua: the Adventures of a Naturalist on a Wild-Goose Chase. Med. 8vo. Pp. 150. (London: Jarrolds Publishers (London), Ltd., 1946.) 21*s*. net.

SNAITH, S. At Grips with Everest. New edition. Cr. 8vo. Pp. 164. (London: Percy Press, 1946.) 3*s*. 6*d*. net.

STEMBRIDGE, JASPER H. The Oxford War Atlas. Vol. 4. Cr. 8vo. Pp. 96. (Oxford: Clarendon Press; London: Oxford University Press, 1946.) 3*s*. 6*d*. net.

TAYLOR, GRIFFITH. Australia. (Advanced Geography Series.) Third edition. Demy 8vo. Pp. 456. (London: Methuen and Co., Ltd., 1946.) 21*s*. net.

General Biology : Natural History
Botany : Zoology

FRISTRUP, B. Copeognatha. (The Zoology of Iceland, Vol. 3, Part 41.) Roy. 8vo. Pp. 4. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1942.) 0.40 kr.*

FRISTRUP, B. Neuroptera and Trichoptera. (The Zoology of Iceland, Vol. 3, Parts 43–44.) Roy. 8vo. Pp. 24. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1942.) 2.25 kr.*

HORSFALL, JAMES G. Fungicides and their Action. (Annales Cryptogamici et Phytopathologici, Vol. 2.) Med. 8vo. Pp. xvi +240. (Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.) 5 dollars.*

KLOET, GEORGE SIDNEY, and HINCKS, WALTER DOUGLAS. A Check List of British Insects. Demy 8vo. Pp. lix +496. (Heaton Chapel, Stockport: Kloet and Hincks, 1945.)*

KOSTOFF, DONTCHO. Cytogenetics of the Genus Nicotiana: Karyosystematics, Genetics, Cytology, Cytogenetics and Phylesis of Tobaccos. Sup. Roy. 8vo. Pp. xxviii +1072. (Sofia: State Printing House, 1941–1943.)*

LILLIE, RALPH STAYNER. General Biology and Philosophy of Organism. Demy 8vo. Pp. 215. (Chicago: University of Chicago Press; London: Cambridge University Press, 1945.) 16*s*. 6*d*. net.*

NORVANG, AKSEL. Foraminifera. (The Zoology of Iceland, Vol. 2, Part 2.) Roy. 8vo. Pp. 80. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1945.) 7.50 kr.*

ORBELI, L. A., Editor-in-Chief. Advances in Biological Sciences in the U.S.S.R. within the Recent 25 Years, 1917–1942: a Symposium. (In Russian.) Sup. Roy. 8vo. Pp. 356. (Moscow and Leningrad: Academy of Sciences of the U.S.S.R., 1945.) 26 roubles.*

OVERGAARD, CHR. Mallophaga and Anophura. (The Zoology of Iceland, Vol. 3, Part 42.) Roy. 8vo. Pp. 22. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1942.) 2.10 kr.*

SMITH, KENNETH M. Virus Diseases of Farm and Garden Crops. Demy 8vo. Pp. 111 +16 plates. (Worcester: Littlebury and Co., Ltd., 1945.) 10*s*. 6*d*. net.*

THORNDIKE, LYNN, assisted by BENJAMIN, JR., FRANCIS S. The Herbal of Rufinus. Edited from the Unique Manuscript. Med. 8vo. Pp. xliii +476. (Chicago: University of Chicago Press; London: Cambridge University Press, 1945.) 27*s*. 6*d*. net.*

THORSON, G. Marine Gastropoda Prosobranchiata. (The Zoology of Iceland, Vol. 4, Part 60.) Roy. 8vo. Pp. 150. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1941.) 14.25 kr.*

TUXEN, S. L. Tardigrada. (The Zoology of Iceland, Vol. 3, Part 24.) Roy. 8vo. Pp. 12. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1941.) 1 kr.*

TUXEN, S. L. Myriopoda. (The Zoology of Iceland, Vol. 3, Part 36.) Roy. 8vo. Pp. 10. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1941.) 0·75 kr.*

TUXEN, S. L. The Hot Springs: their Animal Communities and their Zoogeographical Significance. (The Zoology of Iceland, Vol. 1, Part 11.) Roy. 8vo. Pp. 206 +7 plates. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1944.) 15 kr.*

Agriculture : Horticulture : Forestry

EDE, RONALD. Farming: an Introduction. (Pitman's Farming Books.) Cr. 8vo. Pp. xiv +146. (London: Sir Isaac Pitman and Sons, Ltd., 1945.) 5*s*. net.*

LAWSON, JOHN A. Honeycraft in Theory and Practice. Third edition revised. Cr. 8vo. Pp. xii +164 +6 plates. (London: Chapman and Hall, Ltd., 1945.) 8*s*. 6*d*. net.*

PATERSON, JOHN W. Science in Agriculture. Second edition. Cr. 8vo. Pp. 288. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1945.) 8*s*. 6*d*. net.

PELZER, KARL J. Pioneer Settlement in the Asiatic Tropics: Studies in Land Utilization and Agricultural Colonization in Southeastern Asia. (American Geographical Society, Special Publication No. 29.) Sup. Roy. 8vo. Pp. xviii +290. (New York: American Geographical Society, 1945.) 5 dollars.*

TAYLOR, GEORGE M. Roses: their Culture and Management. Demy 8vo. Pp. 152. (London: W. H. and L. Collingridge, Ltd., 1945.) 8*s*. 6*d*. net.

WATSON, JAMES A. S., and MORE, J. A. Agriculture: the Science and Practice of British Farming. Eighth revised edition. Demy 8vo. Pp. 894. (Edinburgh and London: Oliver and Boyd, 1945.) 20*s*. net.

Anatomy : Physiology

BELL, GEORGE H. Physiology. (Catechism Series.) Part 4. Fifth revised edition. Cr. 8vo. Pp. 74. (Edinburgh: E. and S. Livingstone, Ltd., 1946.) 1*s*. 6*d*. net.

BICKNELL, FRANKLIN, and PRESCOTT, FREDERICK. The Vitamins in Medicine. Second edition, revised and enlarged. Roy. 8vo. Pp. xii +916. (London: William Heinemann (Medical Books), Ltd., 1946.) 50*s*. net.*

GREISHEIMER, ESTHER M. Physiology and Anatomy. Fifth edition. Demy 8vo. Pp. 842. (Philadelphia and London: J. B. Lippincott Co., 1946.) 21*s*. net.

PATERSON, J. L. HAMILTON. Anatomy and Physiology for Nurses. Demy 8vo. Pp. viii +174. (London: H. K. Lewis and Co., Ltd., 1946.) 9*s*. net.

Anthropology : Archæology

LIFCHITZ, DÉBORAH. Textes éthiopiens magico-religieux. (Université de Paris: Travaux et mémoires de l'Institut d'ethnologie, Tome 38.) Sup. Roy. 8vo. Pp. x +254. (Paris: Institut d'Ethnologie, 1940.) 87.50 francs.*

MUS, PAUL. La Lumière sur les Six Voies: Tableau de la transmigration bouddhique d'après des sources Sanskrites, Pali, Tibétaines et Chinoises en majeure partie inédites. 1: Introduction et critique des textes. (Université de Paris: Travaux et mémoires de l'Institut d'ethnologie, Tome 35.) Sup. Roy. 8vo. Pp. xxx +331. (Paris: Institut d'Ethnologie, 1939.) 125 francs.*

PEVSNER, NIKOLAUS. The Leaves of Southwell. (King Penguin Book.) Cr. 8vo. Pp. 72 +32 plates. (Harmondsworth and New York: Penguin Books, Ltd., 1945.) 2*s*. net.*

SACLEUX, CH. Dictionnaire Swahili-François, Tome 1. (Université de Paris: Travaux et mémoires de l'Institut d'ethnologie, Tome 36.) Sup. Roy. 8vo. Pp. iv +479. (Paris: Institut d'Ethnologie, 1939.) 150 francs.*

Philosophy : Psychology

ALEXANDER, F. MATTHIAS. The Use of the Self: its Conscious Direction in relation to Diagnosis, Functioning and the Control of Reaction. Third edition. Demy 8vo. Pp. xxi +97. (London: Chaterson, Ltd., 1946.) 5*s*. net.*

BERGSON, HENRI. The Creative Mind. Translated by Mabelle L. Andison. Demy 8vo. Pp. 307. (New York: Philosophical Library, Inc., 1946.) 3.75 dollars.*

WHEELER, OLIVE A. The Adventure of Youth: the Psychology of Adolescence and its Bearing on the Extension and Reform of Adolescent Education. Cr. 8vo. Pp. ix +212. (Bickley: University of London Press, Ltd., 1945.) 6*s*. net.*

Miscellany

CANNON, WALTER B., and FIELD, RICHARD M. International Relations in Science: a Review of their Aims and Methods in the Past and in the Future. (Chronica Botanica, Vol. 9, No. 4.) Sup. Roy. 8vo. Pp. 251–298. (Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.)*

CHRONICA BOTANICA CALENDAR 1945. (Chronica Botanica, Vol. 9, Nos. 2–3.) Sup. Roy. 8vo. Pp. 77–250 +22 plates. (Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.)*

MEREDITH, G. PATRICK. Visual Education and the New Teacher: a Study of Children and Machines, of Organization and Men. (A *Daily Mail* School-Aid Publication.) Cr. 8vo. Pp. 64. (Exeter: Visual Education Centre, 1946.) 2*s*. 6*d*.*

REYNOLDS, GEORGE F., In honor of. Elizabethan Studies and other Essays. (University of Colorado Studies, Series B: Studies in the Humanities, Vol. 2, No. 4.) Sup. Roy. 8vo. Pp. 387. (Boulder, Colo.: University of Colorado, 1945.) 2.50 dollars.*

STEINDL, JOSEPH. Small and Big Business: Economic Problems of the Size of Firms. (Institute of Statistics, Monograph No. 1.) Demy 8vo. Pp. v +66. (Oxford: Basil Blackwell, Ltd., 1945.) 7*s*. 6*d*. net.*

CAMBRIDGE STANDARD CELLS

Details are given in
SHEET 256-N.
May we send a copy ?

These Cells are constructed on the principles suggested by Sir F. E. Smith, F.R.S. Their reliable characteristics are shown by the following results of tests by the National Physical Laboratory on nine cells.

Cell No.	E.M.F. (International Volts) at :—		
	15·0°C.	20·0°C.	25·0°C.
1	1·01845	1·01827	1·01805
2	1·01845	1·01827	1·01805
3	1·01844	1·01826	1·01804
4	1·01844	1·01826	1·01804
5	1·01844	1·01826	1·01804
6	1·01844	1·01826	1·01804
7	1·01844	1·01826	1·01804
8	1·01844	1·01826	1·01804
9	1·01845	1·01827	1·01805

CAMBRIDGE INSTRUMENT COMPANY LIMITED

WORKS: LONDON AND CAMBRIDGE

HEFFERS of CAMBRIDGE

The Bookshop known the World over for all
SCIENTIFIC BOOKS
English or Foreign
New and Secondhand

If you have any books to sell you are invited to submit lists

W. HEFFER & SONS LTD. 3 & 4 Petty Cury, Cambridge

GRATICULES OF ALL KINDS

By THE RHEINBERG SECRET PROCESS OF
GRAINLESS PHOTOGRAPHY
(Makers of the Patterson Globe and Circle Graticule)

AS USED BY Government Departments—The Flying Services—National Physical Laboratory, London—Bureau of Standards, Washington, U.S.A.—Universities and Technical Colleges—Makers of all kinds of Scientific Instruments—Research Institutions—Scientific Investigators, etc.

Price list of Eyepiece- and Stage-Micrometers, Non-parallax Scales and other Graticules, of which a large stock is kept, post free.

RHEINBERGS LTD.,
57/60 Holborn Viaduct, London, E.C.1
Phone : CENtral 2717, or through any scientific supply house

THE DINES TILTING SYPHON RAIN GAUGE

Overall height - - 34 in.
Diameter of base - 28 in.

This is the very latest type of Self-recording Rain Gauge fitted with a tilting arrangement which ensures a complete syphoning when the rain water has filled the float chamber.

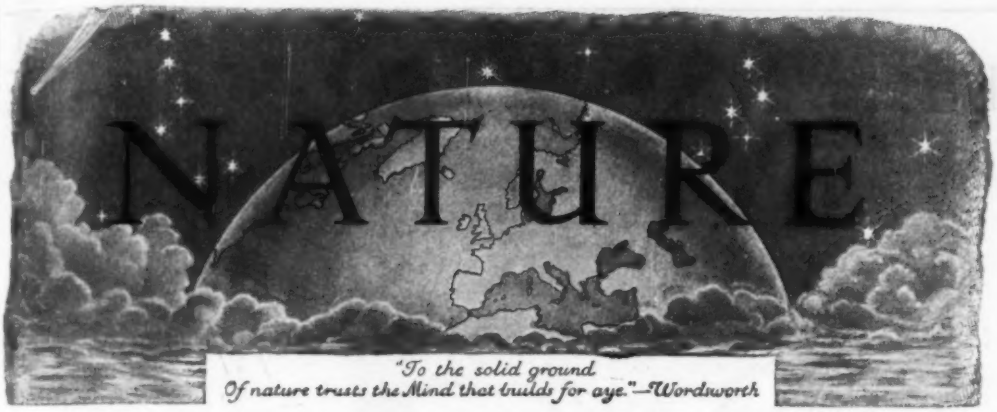
Price and further particulars on application from the Makers :

JAMES J. HICKS
(*Incorporated with W. F. Stanley & Co., Ltd.*)
8, 9 & 10 HATTON GARDEN, LONDON, E.C.1

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.
JUN 11 1946

SUPPLEMENT: RECENT SCIENTIFIC and TECHNICAL BOOKS



Vol. 157, No. 3995 SATURDAY, MAY 25, 1946 ONE SHILLING & SIXPENCE

C. BAKER 244 HIGH HOLBORN LONDON
ESTAB. 1765

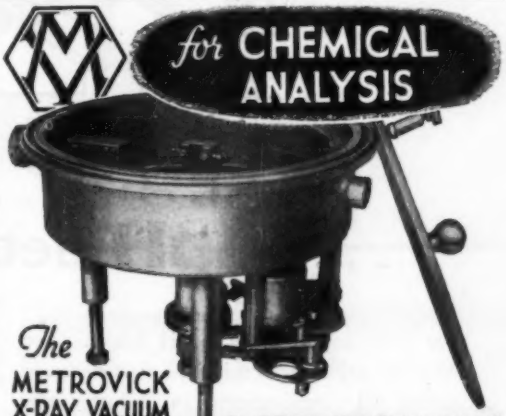
WORKSHOP MICROSCOPE

Consisting of a microscope body with rack and pinion focusing, with or without eyepiece sliding tube. At the back of the focusing adjustment is fitted a metal plate, already tapped, to enable the microscope to be fitted to a lathe, bench, or any other fitting, as desired. Standard eyepieces and objectives can be supplied to customers' requirements.

PRICE £6
(with Sliding Draw Tube)

C. BAKER, 244 High Holborn, LONDON, W.C.1
Member Scientific Instrument Manufacturers' Assn. of Gt. Britain

for CHEMICAL ANALYSIS



The METROVICK X-RAY VACUUM SPECTROGRAPH
Send for our Leaflet 914/1-1

METROPOLITAN Vickers ELECTRICAL CO. LTD
TRAFFORD PARK ··· MANCHESTER 17.

c/x 601

The B.T.L. SEMI-MICRO CENTRIFUGE

Maximum Speed 10,000 r.p.m.
Relative Centrifugal Force 7,000 (approx.)

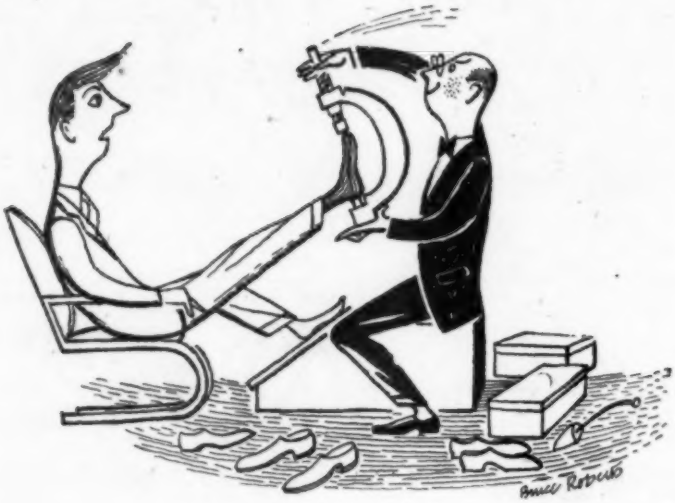
This exceptionally interesting addition to our range of high speed centrifuges is designed to carry six 5 ml. glass tubes inclined at an angle of 55°.
The machine is built on modern lines and incorporates all the distinctive features which characterize B.T.L. Centrifuges.

A leaflet giving full particulars will be sent on request.

BAIRD & TATLOCK (LONDON) LTD.
Manufacturers of Scientific Equipment
14-17 ST. CROSS STREET, LONDON, E.C.1

BTL

LET'S **SIMPLY** BE ACCURATE



. . . in **pH** determination

For speed and accuracy in pH determination Marconi pH Meters, using the glass electrode, satisfy all requirements in industry and laboratory. Electronics provides a means of making spot tests at any time, independent of colour comparisons—yet in so simple a fashion that neither special skill nor training is necessary. The pH Meters are available either for mains or battery operation, each providing rapid readings accurate to ·02 pH. A demonstration can be arranged to suit your convenience.

For process control there are Marconi instruments which provide continuous visible indication of pH or a permanent record on a twenty-four hour chart. Full particulars are available on request; when writing, please describe the process involved.

MARCONI INSTRUMENTS LTD

MEASUREMENT FOR INDUSTRY

ST. ALBANS, HERTS. Telephone: St. Albans 4323/6 · Northern Office: 30 ALBION ST., HULL. Telephone: Hull 16144
Western Office: 10, PORTVIEW ROAD, AVONMOUTH, BRISTOL. Telephone: Avonmouth 438

LABORATORY FURNITURE

Functional suitability, technical convenience and personal convenience are three important factors to be observed in designing a laboratory.

It is evident that the successful planning of a laboratory requires the exercise of a degree of technical knowledge which few fully appreciate. It involves the solution of complex design problems (ventilating fume removal, drainage, layout, disposal of supply services) and a thorough knowledge of structural materials and their suitability for use in various parts of the laboratory.

We are experienced designers of laboratory furniture, manufactured in our own works.

Catalogue 15B-LF on application

Please communicate your requirements to us. A member of our technical design staff will visit your site by arrangement.

GRIFFIN and TATLOCK Ltd

LONDON Kemble Street, W.C.2 — MANCHESTER 19, Cheetham Hill Rd., 4 — GLASGOW 45, Renfrew Street, C.2 — EDINBURGH 7, Teviot Place, 1

Established as Scientific Instrument Makers in 1826

BIRMINGHAM: STANDLEY BELCHER & MASON LTD., CHURCH STREET, 3

Books *ON PURE AND APPLIED SCIENCE*

LARGE STOCK ALWAYS AVAILABLE

Many of the books reviewed or mentioned in this journal are available from stock

Continental and American works unobtainable in this country can be secured under Board of Trade licence in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly

ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.

LONDON: 136 GOWER STREET, W.C.1

Telephone: EUSton 4282 (5 lines)

INTRODUCTION TO PHYSICS

By HARLEY HOWE

Professor of Physics, Cornell University

559 pages, 9 × 6, Illustrated, 22s. 6d. net

UNUSUAL precision of statement and clarity of concept make this new book admirably suited as a course in physics for non-technical students. A thoroughly articulated presentation of the subject is maintained, adhering to the traditional order in Mechanics, and to the general order of Mechanics, Sound, Heat, Electricity and Light. The discussions are related to everyday experience or to simple proposed demonstrations when familiar experience is too complex. Trigonometry is not used. A feature of the text is the wealth of exercises, questions and problems, and summaries.

The approach to electricity emphasizes the practical aspects of the subject, and currents are stressed throughout the entire discussion. Static electricity is introduced for its essential vocabulary; magnetism is made incidental and is described as a result of intra-atomic currents.

McGraw-Hill Publishing Co. Ltd.

Aldwych House, London, W.C.2

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

COOKE, NELSON M., and MARKERS, JOHN. Electronics Dictionary. Demy 8vo. Pp. viii + 434. (New York and London: McGraw-Hill Book Co., Inc., 1946.) 30*s*. net.

DAVIDSON, MARTIN, Edited by. The Gyroscope and its Applications. Demy 8vo. Pp. 256. (London: Hutchinson's Scientific and Technical Publications, 1946.) 21*s*. net.*

GABOR, D. The Electron Microscope: its Development, Present Performance and Future Possibilities. (Electronic Engineering Technical Monographs.) Demy 8vo. Pp. 104. (London: Hulton Press, Ltd., 1946.) 4*s*. 6*d*. net.*

McKAY, HERBERT. The World of Numbers. Ex. Cr. 8vo. Pp. vii + 198. (Cambridge: At the University Press, 1946.) 8*s*. 6*d*. net.*

MÉSON, Le: aspects théoriques et expérimentaux. (Réunions d'études et de mises au point tenues sous le présidence de Louis de Broglie.) Demy 8vo. Pp. iv + 192 + 16 plates. (Paris: Éditions de la *Revue d'Optique théorique et instrumentale*, 1945.) 180 francs.*

RIDER, LIEUT.-COLONEL JOHN F. Inside the Vacuum Tube. Demy 8vo. Pp. xv + 407. (New York: John F. Rider, Publisher, Inc., 1945.) 4.50 dollars.*

ROBERTSON, JOHN KELLOCK. Atomic Artillery and the Atomic Bomb. Cr. 8vo. Pp. xii + 173 + 8 plates. (New York: D. Van Nostrand Co., Inc.; London: Macmillan and Co., Ltd., 1945.) 12*s*. 6*d*. net.*

Engineering

BROWN, D. WARBURTON. Handbook of Engineering Plastics. Med. 8vo. Pp. 270. (London: George Newnes, Ltd., 1946.) 17*s*. 6*d*. net.

CAMM, F. J. Newnes' Engineer's Reference Book. Cr. 8vo. Pp. 1326. (London: George Newnes, Ltd., 1946.) 42*s*. net.

HASLETT, C. Household Electricity. (Teach Yourself Series.) Gl. 8vo. Pp. 216. (London: English Universities Press, 1946.) 3*s*. 6*d*. net.

HEMSLEY, S. H. Optical Instruments in Engineering. Demy 8vo. Pp. 80. (London: Paul Elek (Publishers), Ltd., 1946.) 7*s*. 6*d*. net.

PARKER, HARRY. Simplified Design of Structural Steel. Cr. 8vo. Pp. x + 226. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1946.) 16*s*. 6*d*. net.

WILLOUGHBY, E. P. Carburettors and the Fuel System. (Modern Easy Car Guide Series.) Gl. 8vo. Pp. 56. (London: Temple Press, Ltd., 1946.) 1*s*. 6*d*. net.

Chemistry : Chemical Industry

NIGGLI, PAUL. Grundlagen der Stereochemie. (Lehrbücher und Monographien aus dem Gebiete der exakten Wissenschaften, Chemische Reihe, Band 1.) Roy. 8vo. Pp. 283. (Basel: Verlag Birkhäuser, 1945.) 32.50 francs.*

PARTINGTON, J. R. General and Inorganic Chemistry: for University Students. Demy 8vo. Pp. xxiii + 916. (London: Macmillan and Co., Ltd., 1946.) 36*s*.*

QUINN, E. L., and JONES, C. L. Carbon Dioxide. Med. 8vo. Pp. 294. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1946.) 45*s*. net.

THEILHEIMER, W. Synthetische Methoden der organischen Chemie. Repertorium 1. Med. 8vo. Pp. viii + 224. (Basel and New York: S. Karger, 1946.) 25 francs.*

Technology

MILNER, C. DOUGLAS. Mountain Photography: its Art and Technique in Britain and Abroad. Cr. 4to. Pp. 240. (London and New York: Focal Press, Ltd., 1946.) 19*s*. 6*d*. net.

MYATT, THOMAS E. Blue Print Reading and Making. Cr. 4to. Pp. 128. (London: George Newnes, Ltd., 1946.) 12*s*. 6*d*. net.

NEWCOMBE, H. S. 35mm. Photo Technique. Cr. 8vo. Pp. 294. (London and New York: Focal Press, Ltd., 1946.) 15*s*. net.

SHEARCROFT, W. F. F. The Photographer's Guide to Better Pictures. New edition. Cr. 8vo. Pp. 128. (London: Fountain Press, Ltd., 1946.) 6*s*. net.

TIBBENHAM, L. The Welding of Cast Iron. Second edition. Cr. 8vo. Pp. 120. (London: Sir Isaac Pitman and Sons, Ltd., 1946.) 7*s*. 6*d*. net.

Geography : Travel

FITZGERALD, WALTER. Africa. Fifth edition. Demy 8vo. Pp. 500. (London: Methuen and Co., Ltd., 1945.) 22*s*. 6*d*. net.

JOHNSON, OSA. Bride in the Solomons. Demy 8vo. Pp. 224. (London: George G. Harrap and Co., Ltd., 1946.) 12*s*. 6*d*. net.

RATTENBURY, H. B. Face to Face with China. Demy 8vo. Pp. 176. (London: George G. Harrap and Co., Ltd., 1946.) 10*s*. 6*d*. net.

General Biology : Natural History Botany : Zoology

BARLOW, LADY NORA, Edited, with an Introduction, by. Charles Darwin and the Voyage of the *Beagle*. Demy 8vo. Pp. vii + 280 + 16 plates. (London: Pilot Press, Ltd., 1945.) 15*s*. net.*

BRODY, SAMUEL. Bioenergetics and Growth: with Special Reference to the Efficiency Complex in Domestic Animals. (A Publication of the Herman Frasch Foundation.) Med. 8vo. Pp. xii + 1023. (New York: Reinhold Publishing Corporation, 1945.) 8.50 dollars.*

BRUUN, ANTON FR. The Zoology of Iceland. Vol. 4, Part 64: Cephalopoda. Roy. 8vo. Pp. 16. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1945.) 1.50 kr.*

COSTON, H. E. TOWNER. The Swift Trout: a Tale of Trout in Two Rivers. Cr. 8vo. Pp. 160 + 16 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1946.) 8*s*. 6*d*. net.*

COX, E. H. M. Plant-Hunting in China: a History of Botanical Exploration in China and the Tibetan Marches. Demy 8vo. Pp. 230 + 25 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1945.) 12*s*. 6*d*. net.*

FRISTRUP, B. The Zoology of Iceland. Vol. 3, Part 51: Hemiptera 1. Heteroptera and Homophera Auchenorhyncha. Roy. 8vo. Pp. 21. (Copenhagen and Reykjavik: Ejnar Munksgaard, 1945.) 1.85 kr.*

GAUTHERET, R.-J. Une voie naturelle en biologie végétale: la culture des tissus. (L'Avenir de la Science, No. 21.) Cr. 8vo. Pp. 202 + 32 plates. (Paris: Libr. Gallimard, 1945.) 190 francs.*

GIBBINGS, ROBERT. Blue Angels and Whales: a Record of Personal Experiences Below and Above Water. Second edition, revised and enlarged. Demy 8vo. Pp. viii + 114. (London: J. M. Dent and Sons, Ltd., 1946.) 12*s*. 6*d*. net.*

GROMIER, ÉMILE. La vie des animaux sauvages de l'Afrique. (Bibliothèque géographique.) Med. 8vo. Pp. 344 + 36 plates. (Paris: Libr. Payot, 1938.) 100 francs.*

HOSKING, ERIC, and NEWBERRY, CYRIL. The Swallow. Cr. 8vo. Pp. 60 + 28 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1946.) 7s. 6d. net.*

HOSKING, ERIC, and NEWBERRY, CYRIL. Birds of the Night. Cr. 4to. Pp. 128. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1946.) 12s. 6d. net.

JACK, HOMER A. Biological Field Stations of the World. (Chronica Botanica, Vol. 9, No. 1.) Sup. Roy. 8vo. Pp. vi + 74. (Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.) 2.50 dollars.*

LINTZ, G. D. Animals are my Hobby. Cr. 8vo. Pp. 206. (London: Museum Press, Ltd., 1946.) 15s. net.

LISTER, HARRY. Aids to Zoology. (Students' Aids Series.) Third edition. Fcap. 8vo. Pp. viii + 260. (London: Baillière, Tindall and Cox, 1946.) 6s.*

RUTLEY, C. BERNARD, and BRIMBLE, L. J. F. Elementary Biology in Spring: March, April, May and June. Ex. Cr. 8vo. Pp. vii + 138. (London: Macmillan and Co., Ltd., 1946.) 2s. 9d.

THOM, CHARLES, and RAPER, KENNETH B. A Manual of the Aspergilli. Med. 8vo. Pp. ix + 373. (London: Baillière, Tindall and Cox, 1945.) 38s. 6d.*

Agriculture : Horticulture : Forestry

BIRTWISTLE, VICTOR. Duck-Keeping for Pleasure and Profit. Cr. 8vo. Pp. 96. (London: George Newnes, Ltd., 1946.) 3s. 6d. net.

BRANDT, KARL. The Reconstruction of World Agriculture. Demy 8vo. Pp. 416. (London: George Allen and Unwin, Ltd., 1946.) 21s. net.

BRUCE, MAYE E. Common-sense Compost-making by the Quick Return Method. Cr. 8vo. Pp. 84 + 7 plates. (London: Faber and Faber, Ltd., 1946.) 4s. 6d. net.*

FARM MACHINERY. On Your Metal: the Agricultural Broadcast Discussions on Farm Machinery. Demy 8vo. Pp. 80 + 8 plates. (Worcester: Littlebury and Co., Ltd., 1946.) 7s. 6d. net.*

FREAM, W., the late. Elements of Agriculture. A Text-Book prepared under the authority of the Royal Agricultural Society of England. Twelfth edition, edited by Sir Rowland H. Biffen. Demy 8vo. Pp. viii + 720. (London: John Murray, 1932.) 12s. 6d. net.*

GARNER, H. V., HOARE, A. H., LONG, H. C., STAPLEDON, R. G., RAYNS, F., and WALLACE, T. Profit from Fertilizers. Second and revised edition. Demy 8vo. Pp. 158 + 16 plates. (London: Crosby Lockwood and Son, Ltd., 1945.) 12s. 6d. net.*

KEENE, RAYMOND W. B. Over the Garden Fence: Old Timer Talks about Flowers. Demy 8vo. Pp. 168. (London: Staples and Staples, Ltd., 1946.) 12s. 6d. net.

MILLER, WM. C., and ROBERTSON, E. D. S. Practical Animal Husbandry. Fourth edition. Demy 8vo. Pp. xii + 536. (Edinburgh and London: Oliver and Boyd, 1946.) 20s. net.

NICHOLS, J. E. Livestock Improvement in Relation to Heredity and Environment. Second edition. Demy 8vo. Pp. 216. (Edinburgh and London: Oliver and Boyd, 1946.) 10s. 6d. net.

REYNOLDS, CLIFTON. Glory Hill Farm: Epilogue; One Hundred Acres Farmed by an Amateur—Fourth Year, 1943–44. Cr. 8vo. Pp. 176. (London: John Lane, Ltd., 1946.) 7s. 6d. net.

WOOD, R. CECIL. A Note-Book of Tropical Agriculture. Fcap. 8vo. Pp. iv + 148. (Trinidad: Imperial College of Tropical Agriculture, 1945.) 10s. 6d.*

Anatomy : Physiology

BEST, CHARLES H., and TAYLOR, NORMAN B. The Living Body: Human Physiology. Second revised edition. Demy 8vo. Pp. xxii + 572. (London: Chapman and Hall, Ltd., 1946.) 24s. net.

DU NOISY, L. Studies in Biophysics: The Critical Temperature of Serum, 56°. Med. 8vo. Pp. vi + 185. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1946.) 21s. net.

Anthropology : Archæology

ARMATTOE, R. E. G. The Golden Age of West African Civilization. Published for the Lomeshie Research Centre. Cr. 4to. Pp. 96 + 25 plates. (Londonderry: *Londonderry Sentinel*, 1946.) 8s. 6d. net.*

KEITH, SIR ARTHUR. Essays on Human Evolution. Demy 8vo. Pp. x + 224. (London: Watts and Co., Ltd., 1946.) 15s. net.*

MATHER, R. G. Excavating Buried Treasure. Cr. 8vo. Pp. 124. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1946.) 22s. 6d. net.

Philosophy : Psychology

KYDI, R. M. Reason and Conduct in Hume's Treatise. Demy 8vo. Pp. 208. (Oxford: Clarendon Press; London: Oxford University Press, 1946.) 12s. 6d. net.

LUCE, A. A. Berkeley's Immaterialism: a Commentary on his "A Treatise concerning the Principles of Human Knowledge". Cr. 8vo. Pp. xii + 164. (London and Edinburgh: Thomas Nelson and Sons, Ltd., 1945.) 6s. net.*

RUSSELL, BERTRAND. Physics and Experience. (The Henry Sidgwick Lecture delivered at Newnham College, Cambridge, 10 November 1945.) Cr. 8vo. Pp. 26. (Cambridge: At the University Press, 1946.) 1s. 6d. net.*

THOMAS, J. V. An Outline of Philosophy. Cr. 8vo. Pp. 76. (Ilfracombe: Arthur H. Stockwell, Ltd., 1946.) 2s. 6d. net.

Bacteriology : Hygiene

LAWRENCE, J. STEWART. The Sulphonamides in Theory and Practice. Demy 8vo. Pp. vii + 126. (London: H. K. Lewis and Co., Ltd., 1946.) 9s. net.*

LEWIS, SIR THOMAS. Research in Medicine: and other Addresses. Second edition. Demy 8vo. Pp. ix + 102. (London: H. K. Lewis and Co., Ltd., 1946.) 5s. net.*

MACNALTY, SIR ARTHUR S., and MELLOR, W. FRANKLIN. Health Recovery in Europe. Cr. 8vo. Pp. 180. (London: Frederick Muller, Ltd., 1946.) 7s. 6d. net.*

PAVEY, AGNES E. Hygiene for Nursing Students. Third edition. Cr. 8vo. Pp. 328. (London: Faber and Faber, Ltd., 1946.) 6s. net.

SOKOLOFF, BORIS. Penicillin: a Dramatic Story. Cr. 8vo. Pp. viii + 167. (London: George Allen and Unwin, Ltd., 1946.) 7s. 6d. net.*

WHITBY, SIR LIONEL. The Science and Art of Medicine: an Inaugural Lecture. Cr. 8vo. Pp. 24. (Cambridge: At the University Press, 1946.) 1s. 6d. net.*

Miscellany

BRIDIE, JAMES. The British Drama. (The British Way Series, No. 12.) Demy 8vo. Pp. 40. (Glasgow: Craig and Wilson, Ltd., 1946.) 1s. 3d.*

BRODERICK, JOHN T. Willis Rodney Whitney, Pioneer of Industrial Research. Ex. Cr. 8vo. Pp. 324 + 7 plates. (Albany, N.Y.: Fort Orange Press, Inc., 1945.)*

CHESSER, E., and DAWE, Z. The Practice of Sex Education. Cr. 8vo. Pp. 158. (London: Hutchinson and Co. (Publishers), Ltd., 1946.) 10s. 6d. net.

MANDELBAUM, K., assisted by SCHNEIDER, J. R. L. The Industrialisation of Backward Areas. (Institute of Statistics, Monograph No. 2.) Demy 8vo. Pp. viii + 112. (Oxford: Basil Blackwell, Ltd., 1945.) 10s. 6d. net.*

MAYER, CHARLES. L'Homme ne vaut que par le progrès. Imp. 16mo. Pp. 401. (New York: Éditions de la Maison française, Inc., 1945.)*

TWENEY, C. F., and HUGHES, C. F., Edited by. Chambers's Technical Dictionary. New edition. Med. 8vo. Pp. 975. (Edinburgh and London: W. and R. Chambers, Ltd., 1946.) 20s. net.

WHEARE, K. C. The Machinery of Government: an Inaugural Lecture delivered before the University of Oxford, 16 November 1945. Demy 8vo. Pp. 20. (Oxford: Clarendon Press; London: Oxford University Press, 1945.)*

Details of an extra-sensitive pattern and of an illuminated moving scale Fluxmeter readable at a distance, also sent on request.

6512

PLEASE ASK FOR LIST No. 371-N

CAMBRIDGE FLUXMETER

IMPROVED PATTERN

In this instrument the readings are practically independent of the rate of cutting the magnetic lines of force, the drift of the pointer has been entirely eliminated, and readings may be taken with great facility and rapidity. The scale is approximately 150 mm. long, divided 60-0-60, each division representing 10,000 Maxwell turns.

CAMBRIDGE INSTRUMENT CO. LTD.
13 GROSVENOR PLACE, LONDON, S.W.1
WORKS: LONDON & CAMBRIDGE

"ROSS" PRISMATIC BINOCULARS
THE NEW 7×50 £34/7/- and 7×30 £28/18/9
6×30 "WRAY" £14/10/0
DELIVERY FROM STOCK

OUR FAMOUS 3" ASTRONOMICAL TELESCOPE
ON GARDEN STAND, 80 x EYEPIECE £25

EXTRA EYEPIECES 42/- EACH
STAR FINDERS 8" 75/-, 1" 90/-

TELESCOPES, MICROSCOPES & BINOCULARS
WANTED FOR CASH

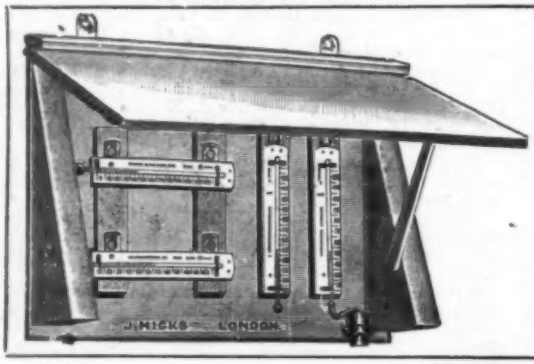
Note name and address:
BROADHURST, CLARKSON & CO. LTD.
63 Farringdon ROAD, London, E.C.1
(3 minutes from Farringdon Street Metro. Station)

MICROSCOPICAL STAINS & REAGENTS

As used and proved satisfactory in our own work.

We are the sole makers of :—
"EUPARAL" (Gilson) Mountant.
"MERSOL" Immersion oil.
"MURRAYITE." Spirit-proof Cement.

FLATTERS & GARNETT LTD.
309 Oxford Road Manchester, 13



THE "COLLEGIATE"
METEOROLOGICAL SET
(As Illustrated)

Comprising Maximum and Minimum Thermometers and Mason's Hygrometer, all being graduated on the stems and figured on porcelain scales; the whole fitted on a wood screen with an adjustable front, for fixing on wall or post. Also a Snowdon 5-inch Copper Rain Gauge with graduated measure reading to ·01 inch.

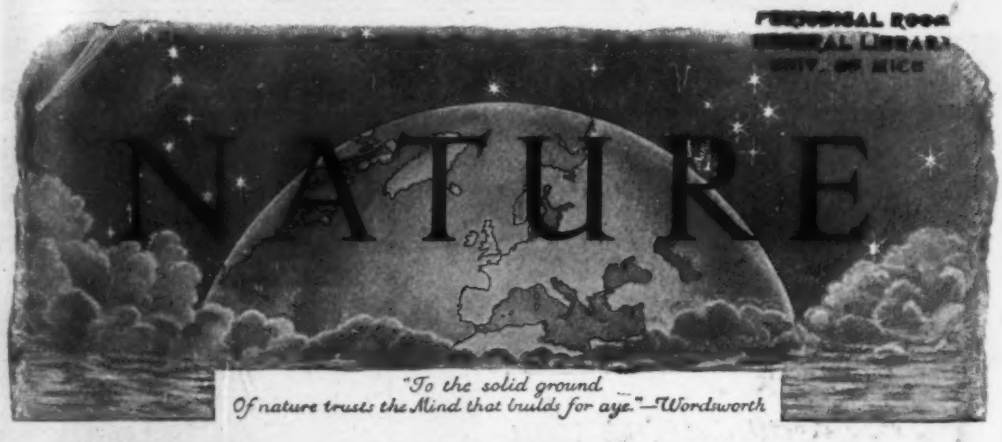
JAMES J. HICKS
(Incorporated with W. F. Stanley & Co. Ltd.)
Manufacturer of Meteorological and other Scientific Instruments.
Contractor to H.M. Government.
Catalogue post free.
★ Exceptional Terms to Colleges, Institutions, etc.
8, 9 & 10 HATTON GARDEN, LONDON

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

AUG 2 1946

SUPPLEMENT: RECENT SCIENTIFIC and TECHNICAL BOOKS

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.



Vol. 157, No. 4000 SATURDAY, JUNE 29, 1946 ONE SHILLING & SIXPENCE

YOUR OWN MATERIAL can be made into Film-Strip and PROJECTED by the

ALPHA FILM-STRIP DIASCOPE

NEWTON & CO., LTD

Telephone: WELbeck 4131 (2 lines)

72 WIGMORE STREET LONDON, W.1

Telegrams: Newtobar Phone LONDON

for CHEMICAL ANALYSIS

The METROVICK X-RAY VACUUM SPECTROGRAPH

Send for our Leaflet 914/1-1

METROPOLITAN Vickers ELECTRICAL CO. LTD.
TRAFFORD PARK ··· MANCHESTER 17.

c/x 601

C. BAKER 244 HIGH HOLBORN LONDON

ESTAB. 1765

MICROTOME CATHCART

This Microtome is suitable for cutting specimens embedded in pith, carrot or paraffin. It is also adapted for frozen objects by means of an ether freezing attachment. The thickness of cut is controlled by a micrometer screw, and repetition cuts of 0·01 m/m. can be obtained.

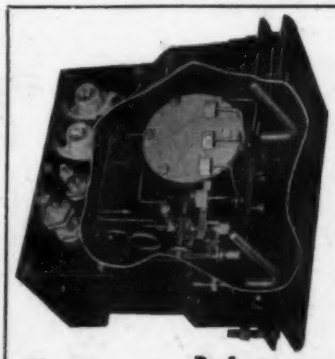
PRICE

MICROTOME COMPLETE FOR EMBEDDED AND FROZEN OBJECTS

£5 10 0

C. BAKER, 244 High Holborn, LONDON, W.C.1

Member Scientific Instrument Manufacturers' Assn. of Gt. Britain



Low pressures of 0 to 2/10" w.g. are amplified to 1 to 5lb./sq. inch over a scale 20" in length.

The Amplifier Transmitter

NEGRETTI & ZAMBRA LTD.

122 Regent Street, London, W.1

Available again soon

'Agla' BRAND **MICROMETER SYRINGE**

A precision instrument capable of measuring volumes of fluid down to 0·001 c.c. with an accuracy of 0·00005 c.c.

Deliveries in rotation when supplies are available.

INQUIRIES TO

BURROUGHS WELLCOME & CO.
(THE WELLCOME FOUNDATION LTD.)
12, RED LION SQUARE, LONDON, W.C.1. CHAncery 6621
(Temporary Address)

Short and Mason Ltd. manufacture Ancroid and Standard Mercurial Barometers, Thermometers, Actinometers (including M.O. Pattern), Hygrometers, Radiosondes, Sunshine Recorders, and Thermographs (including M.O. Patterns), for Meteorological Purposes

SHORT & MASON
LIMITED
THE INSTRUMENT HOUSE
LONDON E.17

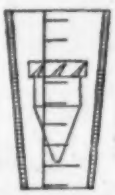
FLOWMETERS
FOR GAS & LIQUID

ROTAMETERS

Indicate the momentary rate of flow of gas or liquid in pipe lines

FRICTIONLESS OPERATION
LOW PRESSURE LOSS

Main flow Rotameters for flows from 1 Litre/hr. and up to 2,500 Cu. ft./hr.
Orifice Rotameters for large diameter pipe lines.



ROTAMETER MNFG.CO.LTD.
VALE ROAD PORTSLADE

ALLANTOIN
For medicinal and synthetic uses.

ALLOXANTIN
For organic syntheses and as a raw material for the manufacture of riboflavin.

HYDRAZINE SULPHATE
One of the most powerful reducing agents.
Used in rare-metal refining, and as an anti-oxidant in light-metal fluxing and soldering.

PHLOROGLUCINOL
An essential developer and end-component in dye-line printing.

RUBIDIUM SALTS
For the manufacture of thermionic and photo-sensitive valves.

GENATOSAN LTD.,
LOUGHBOROUGH, LEICESTERSHIRE
Telephone: Loughborough 2292

B-S

POLARIMETER MODEL D

Recently redesigned, this instrument is fitted with a glass circle reading by means of a divided drum to 0·05° with closer readings by estimation. Circle and drum are fully illuminated, and the difficulty of reading verniers is eliminated.

The circle which is normally divided to read angular degrees can be arranged to have the sugar scale substituted for part of the angular scale. In this case, the second edge of the drum is divided to read 0·1 sugar degrees.

The instrument takes tubes up to 220 mm. in length, and is intended for use with the electric sodium lamp.

Bellingham & Stanley, Ltd.

71 Hornsey Rise **London, N.19**

Telephone: ARChway 2270

Books ON PURE AND APPLIED SCIENCE

LARGE STOCK ALWAYS AVAILABLE

Many of the books reviewed or mentioned in this journal are available from stock

Continental and American works unobtainable in this country can be secured under Board of Trade licence in the shortest possible time

Scientific Lending Library

New books and latest editions obtainable promptly

ANNUAL SUBSCRIPTION, TOWN OR COUNTRY FROM ONE GUINEA

Second-hand Books

140, GOWER STREET, W.C.1

H. K. LEWIS & Co. Ltd.

LONDON: 136 GOWER STREET, W.C.1

Telephone: EUSton 4282 (5 lines)

ELEMENTARY METEOROLOGY

By

V. C. FINCH, G. T. TREWARTHA, M. H. SHEARER, and F. L. CAUDLE

301 pages, 9 × 6, 171 illustrations, 10s. 6d.

ALL factual material for this book has been drawn from the most recent and dependable sources available, and the student can obtain a clear understanding of meteorological principles.

Contents

Preface
The Earth and its Planetary Relations
Temperature of the Atmosphere
Atmospheric Pressure and Winds
Atmospheric Moisture and Precipitation
Storms and their Weather Types
Climates of the Tropics and the Dry Middle Latitudes
Climates of Middle and High Latitudes
Weather Information for Pilots
Weather Applications to Aviation
The Seasons
Supplementary Climatic Data for Selected Stations
Meteorological Instruments and the Weather Map
Interpretation of Maps
Useful Data and Tables
Index

McGraw-Hill Publishing Co. Ltd.

Aldwych House, London, W.C.2

RECENT SCIENTIFIC and TECHNICAL BOOKS

Volumes marked with an asterisk (*) have been received at "NATURE" Office

Mathematics : Mechanics : Physics

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. Mathematical Tables. Vol. 1: Circular and Hyperbolic Functions, Exponential and Sine and Cosine Integrals, Factorial Function and Allied Functions, Hermitian Probability Functions. Prepared by the Committee for the Calculation of Mathematical Tables. Second edition. Demy 4to. Pp. xi + 72. (Cambridge: At the University Press, 1946.) 10*s*. net.*

GEARY, A., LOWRY, H. V., and HAYDEN, H. A. Advanced Mathematics for Technical Students. Part 1. Demy 8vo. Pp. viii + 419. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1945.) 12*s*. 6*d*.*

HAWLEY, GESSNER G., and LEIFSON, SIGMUND W. Atomic Energy in War and Peace. Cr. 8vo. Pp. 212. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1946.) 15*s*. net.

JOHNSON, R. C. Atomic Spectra. (Methuen's Monographs on Physical Subjects.) Fcap. 8vo. Pp. viii +120. (London: Methuen and Co., Ltd., 1946.) 5*s*. net.*

KEENAN, JOSEPH H., and KAYE, JOSEPH. Thermodynamic Properties of Air: including Polytropic Functions. Roy. 8vo. Pp. iii + 73. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1946.) 13*s*. 6*d*. net.

NORTHROP, EUGENE P. Riddles in Mathematics: a Book of Paradoxes. Demy 8vo. Pp. 242. (London: English Universities Press, Ltd., 1946.) 10*s*. 6*d*. net.

Engineering

BINNS, H. Examples in Engineering. Vol. 2. Sup. Roy. 8vo. Pp. 79. (London: English Universities Press, Ltd., 1946.) 6*s*. net.

DWIGHT, HERBERT B. Electrical Coils and Conductors: their Electrical Characteristics and Theory. Demy 8vo. Pp. ix +352. (New York and London: McGraw-Hill Book Co., Inc., 1946.) 30*s*. net.

MALEEV, V. L. Internal Combustion Engines: Theory and Design. Second edition. Demy 8vo. Pp. xii +636. (New York and London: McGraw-Hill Book Co., Inc., 1946.) 30*s*. net.

"MECHANICAL WORLD" Electrical Year Book, 1946. Cr. 8vo. Pp. 160. (Manchester and London: Emmott and Co., Ltd., 1946.) 2*s*. 6*d*. net.

PRESGRAVE, RALPH. Dynamics of Time Study. Demy 8vo. Pp. xi +238. (New York and London: McGraw-Hill Book Co., Inc., 1946.) 15*s*. net.

TIMOSHENKO, S., and YOUNG, D. H. Theory of Structures. Demy 8vo. Pp. vii +488. (New York and London: McGraw-Hill Book Co., Inc., 1946.) 30*s*. net.

WYBROW, S. G. Electrical and Wireless Equipment of Aircraft. Fifth edition. Demy 8vo. Pp. 190. (London: Sir Isaac Pitman and Sons, Ltd., 1946.) 8*s*. 6*d*. net.

Chemistry : Chemical Industry

ANSON, M. L., and EDSALL, JOHN T., Edited by. Advances in Protein Chemistry. Vol. 2. Med. 8vo. Pp. xiii +443. (New York: Academic Press, Inc., 1945.) 6.50 dollars.*

BRITISH PHARMACEUTICAL CODEX, 1934. Supplements 1–7. Demy 8vo. Pp. 14 +40 +98 +78 + 14 +30 +134. (London: Pharmaceutical Press, 1946.) 21*s*.*

IVANOVSZKY, L., Edited by. Chemical Industries. Twentieth edition, enlarged and revised. Demy 4to. Pp. xxviii + 394. (London: Leonard Hill, Ltd., 1946.) 15*s*.*

KARVE, D. D., and ADVANI, G. D. Selected Topics from Organic Chemistry. Demy 8vo. Pp. iv +282. (Poona: Dastane Brothers, 1945.) 8 rupees.*

Technology

FLECK, H. RONALD. Plastics: Scientific and Technological. Second edition. Med. 8vo. Pp. 361 + xlii. (London: Temple Press, Ltd., 1946.) 30*s*. net.*

GERRARD, F. Meat Technology. Demy 8vo. Pp. 304. (London: Leonard Hill, Ltd., 1946.) 15*s*. net.

JOHNSON, F. Metal Working and Heat Treatment. Demy 8vo. Vol. 1. Pp. 204. (London: Paul Elek (Publishers), Ltd., 1946.) 17*s*. 6*d*. net.

LEA, F. C., and SIMONS, E. N. The Machining of Steel: Simply Explained. Cr. 8vo. Pp. 214 + 8 plates. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1946.) 8*s*. 6*d*. net.

MAWHINNEY, M. H. The Heating of Steel. Med. 8vo. Pp. vii + 265. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1946.) 28*s*. 6*d*. net.

NATKIN, MARCEL. Photography by Artificial Light: at Home, in the Street, and in the Theatre. New edition. Demy 8vo. Pp. 80. (London: Fountain Press, Ltd., 1946.) 7*s*. 6*d*. net.

Geography : Travel

FERRIDAY, A. Map Reading for Schools. Cr. 4to. Pp. 48. (London: Macmillan and Co., Ltd., 1946.) 2*s*. 6*d*.

GRAJDANOV, A. J. Modern Korea. Demy 8vo. Pp. 330. (London: George Allen and Unwin, Ltd., 1946.) 20*s*. net.

HADFIELD, E. C. R. British Rivers and Canals. (Britain in Pictures Series.) Cr. 4to. Pp. 48 + 8 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1946.) 4*s*. 6*d*. net.

OSBORN, FAIRFIELD, Edited by. The Pacific World: its Vast Distances, its Lands and the Life upon Them and its Peoples. Demy 8vo. Pp. 218. (London: George Allen and Unwin, Ltd., 1946.) 12*s*. 6*d*. net.

PHILBY, H. ST. J. B. A Pilgrim in Arabia. Demy 8vo. Pp. 198 + 48 plates. (London: Robert Hale, Ltd., 1946.) 16*s*. net.*

General Biology : Natural History Botany : Zoology

BIBBY, CYRIL. How Life is Handed On. Cr. 8vo. Pp. vii +96. (London and Edinburgh: Thomas Nelson and Sons, Ltd., 1946.) 3*s*.*

GAÜMANN, ERNST. Pflanzliche Infektionslehre: Lehrbuch der allgemeinen Pflanzenpathologie für Biologen, Landwirte, Förster und Pflanzenzüchter. (Lehrbücher und Monographien aus dem Gebiete der exakten Wissenschaften, 3.) Sup. Roy. 8vo. Pp. 611. (Basel: Verlag Birkhäuser, 1946.) 48.50 francs.*

KNOWLES, FRANCIS G. W. Man and other Living Things: an Introduction to Human Biology. Demy 8vo. Pp. 355 +32 plates. (London: George G. Harrap and Co., Ltd., 1945.) 10*s*. 6*d*.*

KUDO, RICHARD R. Protozoology. Third edition. Demy 8vo. Pp. xiii +778. (Springfield, Ill.: Charles C. Thomas, 1946.) 8 dollars.*

Agriculture : Horticulture : Forestry

GRAY, ERNEST. Diseases of Poultry: their Aetiology, Diagnosis, Treatment and Control. Demy 8vo. Pp. 197. (London: Crosby Lockwood and Son, Ltd., 1946.) 12*s*. 6*d*. net.

HENREY, BLANCHE, and BEAN, W. J. Trees and Shrubs throughout the Year. New edition. Demy 8vo. Pp. 146. (London: Lindsay Drummond, Ltd., 1946.) 21*s*. net.

McKEEKAN, C. P. Principles of Animal Production. Demy 8vo. Pp. 242. (Melbourne, Auckland and London: Whitcombe and Tombs, Ltd., 1946.) 15*s*. net.

NETTELL, R. G. Your Career in Poultry Breeding. Cr. 8vo. Pp. 106. (London: Jordan and Sons, Ltd., 1946.) 5*s*. net.

NEWSHAM, J. C. Crops and Tillage. Revised edition, by J. Gunston. Cr. 8vo. Pp. 196. (London: Methuen and Co., Ltd., 1946.) 8*s*. 6*d*. net.

POWELL, L. B., Edited by. Country Living: a Practical Guide. Cr. 8vo. Pp. 124 + 16 plates. (East Grinstead: Land and Home Publications, Ltd., 1946.) 2*s*.*

WORMALD, H. Diseases of Fruit and Hops. New edition. Demy 8vo. Pp. 294. (London: Crosby Lockwood and Son, Ltd., 1946.) 21*s*. net.

Anatomy : Physiology

JOHNSTONE, MARY A. First Lessons in Physiology and Hygiene. Cr. 8vo. Pp. 186. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1946.) 3*s*.

LUCK, JAMES MURRAY, and SMITH, JAMES H. C., Edited by. Annual Review of Biochemistry. Vol. 14. Med. 8vo. Pp. x + 856. (Stanford University P.O.; Calif.: Annual Reviews, Inc.; London: H. K. Lewis and Co., Ltd., 1945.)*

MURRAY, D. STARK. Your Body: How it is Built and How it Works. (Thinkers' Library.) Fcap. 8vo. Pp. 104. (London: Watts and Co., Ltd., 1946.) 2*s*. net.

WIDDOWSON, T. W. Special or Dental Anatomy and Physiology and Dental Histology. Revised edition. Demy 8vo. Vol. 1. Pp. 472. (London: Staples Press. Ltd., 1946.) 42*s*. net.

Anthropology : Archæology

FÜRER-HAIMENDORF, CHRISTOPH VON, in collaboration with FÜRER-HAIMENDORF, ELIZABETH VON. The Reddis of the Bison Hills: a Study in Acculturation. (The Aboriginal Tribes of Hyderabad, Vol. 2.) Imp. 8vo. Pp. xvii + 373 + 84 plates. (Bombay and London: Macmillan and Co., Ltd., 1945.) 20 rupees.*

KENNEDY, RAYMOND. Bibliography of Indonesian Peoples and Cultures. (Yale Anthropological Studies, Vol. 4.) Demy 4to. Pp. 212. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1946.) 16*s*. 6*d*. net.*

LANDRY, STUART OMER. The Cult of Equality: a Study of the Race Problem. Roy. 8vo. Pp. 359. (New Orleans, La.: Pelican Publishing Co., 1946.) 3.50 dollars.

LETT, L. Papua: its People and its Promise—Past and Future. Demy 8vo. Pp. 108. (Melbourne: F. W. Cheshire Pty., Ltd., 1946.) 7*s*. 6*d*. net.

NEUGEBAUER, O., and SACHS, A., Edited by. Mathematical Cuneiform Texts. With a Chapter by A. Goetze. (American Oriental Series, Vol. 29.) Ex. Cr. 4to. Pp. 177 + 49 plates. (New Haven, Conn.: American Oriental Society and the American Schools of Oriental Research, 1945.)*

PARSONS, E. C. Peguche, Canton of Otavalo, Province of Imbabura, Ecuador: a Study of Andean Indians. 8vo. Pp. viii + 226. (Chicago: University of Chicago Press; London: Cambridge University Press, 1946.) 18*s*. net.

Philosophy : Psychology

BLACKER, C. P. Neurosis and the Mental Health Services. (Oxford Medical Publications.) Demy 8vo. Pp. xxii + 218. (London, New York and Toronto: Oxford University Press, 1946.) 20*s*. net.*

RATIONALISM in Education and Life. Papers read at the First Annual Conference of the Rational Press Association, held at Wadham College, Oxford, August 1945. Cr. 8vo. Pp. v + 149. (London: Watts and Co., Ltd., 1946.) 5*s*. net.*

ROBERTSON, ARCHIBALD. Jesus: Myth or History? (Thinker's Library, No. 110.) Fcap. 8vo. Pp. xv + 112. (London: Watts and Co., Ltd., 1946.) 2*s*. net.*

SARGANT, WILLIAM, and SLATER, E. Introduction to Physical Methods of Treatment in Psychiatry. New edition. Demy 8vo. Pp. 180. (Edinburgh: E. and S. Livingstone, Ltd., 1946.) 8*s*. 6*d*. net.

URWIN, KENNETH. A Century for Freedom: a Survey of the French 'Philosophers'. (Thinker's Library, No. 109.) Fcap. 8vo. (London: Watts and Co., Ltd., 1946.) 2*s*. net.*

WILD, JOHN. Plato's Theory of Man. Demy 8vo. Pp. 332. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1946.) 28*s*. net.

YOUNG, KIMBALL. Handbook of Social Psychology. (International Library of Sociology and Social Reconstruction.) Demy 8vo. Pp. ix + 578. (London: Kegan Paul and Co., Ltd., 1946.) 21*s*. net.*

Bacteriology : Hygiene

TOPLEY AND WILSON'S Principles of Bacteriology and Immunity. Third edition, revised by G. S. Wilson and A. A. Miles. 2 vols. Roy. 8vo. Vol. 1. Pp. xi + 970 + xliv. Vol. 2. Pp. viii + 971–2054 + xliv. (London: Edward Arnold and Co., 1946.) 60*s*. net.*

WILLIAMS, G. BRANSBY. The Purification of Water Supplies. Second revised edition. Demy 8vo. Pp. 96. (London: Chapman and Hall, Ltd., 1946.) 7*s*. 6*d*. net.

Miscellany

BATES, RALPH S. Scientific Societies in the United States. Demy 8vo. Pp. vii + 246. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1946.) 21*s*. net.

BAYKOV, ALEXANDER. The Development of the Soviet Economic System: an Essay on the Experience of Planning in the U.S.S.R. (National Institute of Economic and Social Research: Economic and Social Studies, 5). Demy 8vo. Pp. xv + 514. (Cambridge: At the University Press, 1946.) 30*s*. net.*

COOPER, HERBERT J., Described by specialists under the editorship of. Scientific Instruments. Demy 8vo. Pp. 293. (London: Hutchinson's Scientific and Technical Publications, 1946.) 25*s*. net.*

DESCH, CECIL H. Science and the Social Order. ('Looking Forward' Pamphlets, No. 6.) Cr. 8vo. Pp. 49. (London and New York: Royal Institute of International Affairs, 1946.) 1*s*. net.*

DUNCAN, G. A. International Trade. ('Looking Forward' Pamphlets, No. 7.) Cr. 8vo. Pp. 59. (London and New York: Royal Institute of International Affairs, 1946.) 1*s*. net.*

HONIG, PIETER, and VERDOORN, FRANS, Edited by. Science and Scientists in the Netherlands Indies. (Natuurwetenschappelijk Tijdschrift voor Nederlandsch Indie, Vol. 102, Special Supplement.) Sup. Roy. 8vo. Pp. xxii + 492. (New York: Board for the Netherlands Indies, Surinam and Curacao; Waltham, Mass.: Chronica Botanica Co.; London: Wm. Dawson and Sons, Ltd., 1945.) 4 dollars; 21*s*.*

HOWARD, EBENEZER. Garden Cities of To-morrow. Edited, with a Preface, by F. J. Osborn. Cr. 8vo. Pp. 168 + 8 plates. (London: Faber and Faber, Ltd., 1946.) 6*s*. net.*

INFIELD, HENRIK F. Co-operative Living in Palestine. (International Library of Sociology and Social Reconstruction.) Demy 8vo. Pp. xii + 145 + 8 plates. (London: Kegan Paul and Co., Ltd., 1946.) 7*s*. 6*d*. net.*

KOMAROV, V. L. Opera Selecta. (In Russian.) Vol. 1. Sup. Roy. 8vo. Pp. lviii + 668. (Moscow and Leningrad: Akademii Nauk S.S.S.R., 1945.) 40 roubles.*

LIMAYE, P. M. Education in India To-day: being the Report of an Educational Tour, October 1940–March 1941. Cr. 8vo. Pp. viii + 140. (Poona: D. D. Karve, Fergusson College, 1945.) 2 rupees.*

VAVILOV, S. I. Isaac Newton. (In Russian.) Second edition, revised. Cr. 8vo. Pp. 230 + 22 plates. (Moscow and Leningrad: Academy of Sciences of the U.S.S.R., 1945.) 18 roubles.*

WOOD, ALEXANDER. The Cavendish Laboratory. Fcap. 8vo. Pp. 59 + 8 plates. (Cambridge: At the University Press, 1946.) 2*s*. 6*d*. net.*

HILGER RESEARCH X-RAY DIFFRACTION UNIT

- **Four Windows with Filter Holders.**
- **Change of four X-radiations, without breaking vacuum, independently at each window.**
- **Prefocused and mounted filaments on plug-in mount.**
- **Interlocked Electrical Circuits.**
- **Total X-Ray Tube emission 160 mA—50 kV (peak) continuously.**

HILGER

CAMERAS

9cm. Powder Camera—19cm. Powder Camera.

- Provision for work of high accuracy with fine specimens.
- Routine identification with eccentric rod or block specimens.
- Vacuum-tight hood for each camera.

Universal Flat Film Camera.

- Rotatable back reflection and transmission cassettes mounted on optical bar.
- Stationary or reciprocating stages for large specimens.

Semi-Cylindrical Cameras.

- For use on optical bar of Universal Flat Film Camera.
- Three Cameras of diameters 9cms., 11·46 cms., 19 cms.
- Rotating or oscillating specimen stage.

Phone: GULliver 5571 (7 lines)

ADAM HILGER LTD.
98 St. Pancras Way
Camden Road
LONDON, N.W.1

Telegrams: SPHERICITY Phone LONDON

PRINTED IN GREAT BRITAIN BY FISHER, KNIGHT AND CO., LTD., ST. ALBANS

ens.

d on